

December 7, 2023

Planning and Zoning Commission
Town Hall Annex
238 Danbury Road
Wilton, CT 06897
Attn: Mr. Michael E. Wrinn, Town Planner

RE: Applications for Change of Zone, Site Plan and Special Permit Approval
Project Site: 131 Danbury Road
Contract Purchaser: 131 Danbury Wilton Dev AMS LLC
(an affiliate of AMS Acquisitions, LLC)

Dear Mr. Chairman and Members of the Board,

Our client, 131 Danbury Wilton Dev AMS LLC (an affiliate of AMS Acquisitions, LLC) (the “Applicant”), the contract purchaser and potential developer of 131 Danbury Road, we request review of the enclosed applications for Change of Zone, Site Plan and Special Permit approval in connection with the proposed redevelopment of the project site. The 4.75± acre property is located on the westerly side of Danbury Road just south of 141 Danbury Road which is currently under construction and just north of Ring’s End. The property sits in the DE-5, Design Enterprise District, and is eligible to have the DE-5R, Design Enterprise Residential District Overlay, applied to the site. The property is currently improved with an office building and surface parking. The Applicant proposes to remove the existing structure and redevelop the property with a 4 ½-story building with 208 apartments and appurtenant parking, infrastructure, and amenities. The design team includes Beinfield Architecture and SLR Consulting who have designed the site and building to be sensitive to the views from Danbury Road and to greatly improve the buffer to the Norwalk River.

Included herewith for your consideration are the following documents:

1. Owner Authorization Letter with letter of Title and Deed in the Wilton Land Record
2. Contract Purchaser Authorization Letter
3. Check in the amount of \$460.00 for the Change of Zone Application Fee
4. Check in the amount of \$10,860 for the Special Permit & Site Plan Application fee
5. Change of Zone Application with:
 - Zone Change - Area Description
 - ZC - Zone Change Map, prepared by SLR, dated November 27, 2023
6. Site Development Plan Application with:

- Project Background & Statement of Compliance with Site Plan Approval Standards
 - Form B - Zoning Data
 - Town of Wilton Plan of Conservation and Development Guidance
7. Special Permit Application with:
- Schedule A: Statement of Compliance with Special Permit Standards for Approval
 - Schedule B: Environmental Impact Statement
8. ALTA/NSPS Land Title Survey, prepared by Blew & Associates, P.A., dated June 19, 2023 and revised October 18, 2023.
9. Architectural Drawings by Beinfeld Architecture dated November 28, 2023, including sheets:
- Cover Sheet
 - A0.01 - Vicinity Map
 - A0.02 - Building & Zoning Metrics
 - A0.90 - Site Plan - Current vs Proposed
 - A100 - Architectural Site Plan
 - A1.01 - Basement Plan
 - A1.02 - First Floor Plan
 - A1.03 - Second Floor Plan
 - A1.04 - Third Floor Plan
 - A1.05 - Fourth Floor Plan
 - A1.06 - Loft / Roof Plan
 - A1.07 - Roof Plan
 - A2.23 - East Elevations
 - A2.25 - North Elevation
 - A2.26 - West Elevation
 - A2.27 - South Elevation
 - A3.01 - Building Sections
 - A5.01 - Typical Unit Plans
 - A8.01 - Wall Detail
 - A8.02 - Wall Detail @ Parapet
 - A9.00 - Rendering
 - A9.01 - Rendering
 - A9.02 - Hand Rendering
 - 131 Danbury Road Neighboring Properties Exhibit

10. Site Engineering Plans prepared by SLR, dated October 23, 2023 and revised November 27, 2023, including sheets:

- Title Sheet
- NL - Notes and Legend
- EX - Existing Conditions
- SP - Site Vicinity Plan
- LA - Site Plan - Layout
- LS - Site Plan - Landscaping
- GR - Site Plan - Grading
- UT - Site Plan - Utilities
- SE-1 - Sediment and Erosion Control Plans
- SE-2 - Sediment and Erosion Control Specifications and Details
- SD-1 - Site Details
- SD-2 - Site Details
- SD-3 - Site Details
- SD-4 - Site Details
- SD-5 - Site Details
- ABG - Combined Average Building Grade
- FP - Floodplain Earthwork
- EW - Proposed Site Earthwork
- VH-1 - Vehicle Turning Movement - Fire Truck
- VH-2 - Vehicle Turning Movement - SU-30 and 15' Box Truck
- SL-1B - Site Lighting Photometric Calculation (By Apex Lighting Solutions)

11. Drainage Report, prepared by SLR, dated October 23, 2023 and revised November 15, 2023

12. Traffic Impact Study, prepared by SLR, dated November 27, 2023

13. Downstream Sewer Capacity Analysis, prepared by SLR, dated November 27, 2023

14. Wetland and Watercourse Delineation and Impact Assessment, prepared by SLR, dated October 23, 2023

15. Market Capacity Analysis, prepared by Goman + York, dated November 16, 2023

16. Estimate of School Aged Children in Multifamily Housing, prepared by Redniss & Mead, dated November 15, 2023
17. Engineering Report - Floodplain Analysis, prepared by SLR, dated November 27, 2023
18. Preliminary Construction Management Plan, prepared by AMS Construction Management
19. List of Project Professionals
20. List of Property Owners within 500' of the Subject Property

The Applicant looks forward to presenting their plans to the Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig J. Flaherty". The signature is stylized and cursive.

Craig J. Flaherty, P.E.

FGI REALTY CORP
525 HOMESTEAD AVE., MT. VERNON, NY 10550 – FGIREALTYCORP@GMAIL.COM – 718-384-1110

LFGI Wilton LLC.
525 Holmstead Avenue
Mt. Vernon, NY 10550

September 28, 2023

Mr. Michael Wrinn, Town Planner
Planning & Zoning Department, Town Hall Annex
238 Danbury Road
Wilton, CT 06897

RE: 131 Danbury Road, Wilton, CT
Owner Authorization Letter, Title Letter, and Proof of Legal Interest Letter

Dear Mr. Wrinn,

FGI Wilton LLC. is the owner of 131 Danbury Road in Wilton, CT. This ownership is evidenced by the Warranty Deed appended hereto (Book 2483, Page 1026) listing FGI Wilton LLC. as the owner as of January 19, 2018.

FGI Wilton LLC. has entered a contract to sell the property to 131 Danbury Wilton Dev AMS LLC (an affiliate of AMS Acquisitions LLC), their office being located at 1 Bridge Plaza North, Suite 840, Fort Lee, NJ 07024.

FGI Wilton LLC. does hereby grant 131 Danbury Wilton Dev AMS LLC and their agent, Redniss & Mead, Inc. of 22 First Street, Stamford CT 06905, permission to file land use applications with the Inland Wetlands Commission, Architectural Review Board, and Planning & Zoning Commission as may be necessary to permit the contemplated redevelopment of the property into multi-family housing.

Sincerely,

FGI Wilton LLC.

BY: 

Larry Moskowitz
VP, FGI Realty Corp.
Duly Authorized Signatory

MINTZ AND COLANGELO
16 RIVER STREET
NORWALK, CT 06852



WARRANTY DEED

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME, KNOW YE THAT:

131 WILTON LLC, a New York limited liability company, with a mailing address at 4 West Red Oak Lane, White Plains, New York 10604 ("Grantor"), for consideration of Nine Million Two Hundred Twenty Five Thousand and 00/100 Dollars (\$9,225,000.00), grants to

FGI WILTON LLC., a New York limited liability company, with a mailing address at 525 Homestead Avenue, Mt. Vernon, New York 10550 ("Grantee")

with **WARRANTY COVENANTS** all that certain real property located in the Town of Wilton, County of Fairfield and State of Connecticut, being more particularly described in **Schedule A** attached hereto and made a part hereof.

Said premises are conveyed subject to:

1. Any and all provisions of any municipal, ordinance or regulation or public or private law with special reference to the provisions of any zoning regulations and regulations governing the said Premises.
2. Real property taxes on the current Grand List and any municipal liens or assessments becoming due and payable on or after the delivery of this Deed.
3. Such additional encumbrances, if any, as more particularly set forth in Schedule B attached hereto.

In all references herein to any parties, persons, entities or corporations, the use of any particular gender or the plural or singular number is intended to include the appropriate gender or number as the text of the within instrument may require.

[remainder of page intentionally blank - signature page to follow]

IN WITNESS WHEREOF, the Grantor has caused these presents to be executed on this 19 day of January, 2018.

Signed, sealed and delivered in the presence of or attested by:

131 WILTON LLC
By: GHP Office Realty, LLC

Stewart Wolf
(Witness)
[Signature]
(Witness)

By: [Signature]
Name: Andrew M. Greenspan
Title: Operating Manager

STATE OF NEW YORK
COUNTY OF WESTCHESTER

Personally appeared Andrew M. Greenspan, signer and sealer of the foregoing instrument, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained in the capacity therein stated, before me, on this 19 day of ~~September~~, 2018.
January

JAMES E. SCHWARTZ
Notary Public, State of New York
No. 02SC6171925
Qualified in Westchester County
Commission Expires July 10, 2018

[Signature]
Notary Public/Commissioner of the Superior Court

Conveyance Tax Received
Terri A. Kobrick
Town Clerk of Wilton
State \$ 115,312.50
Town \$ 23,062.50

SCHEDULE ALegal Description

ALL THAT CERTAIN piece, parcel or tract of land, with the buildings, improvements and parking facilities situated thereon, in the Town of Wilton, County of Fairfield and State of Connecticut, being the same premises known as Number 131 Danbury Road, situated on the Westerly side of the Norwalk-Danbury Road, Route 7, and designated as "Parcel 1A, Area = 4.74 Ac." On a map entitled, "Revised Map of Property prepared for Robert O. Banks and Ernest Rau at Wilton, Conn., Scale 1" = 40' dated June 15, 1967 prepared and certified substantially correct by Leo Leonard, Civil Engineer & Surveyor, Norwalk, Connecticut, which map is on file in the office of the Town Clerk of the Town of Wilton, Connecticut bearing file number 3609, said premises being bounded and described as follows in accordance with said map:

BEGINNING at a point where a stone wall intersects the westerly side of the public highway, Norwalk-Danbury Road (Route U.S. #7) so-called, said point making the southeasterly corner of the premises hereby conveyed and the northeasterly corner of land now or formerly of Wilton Supply Company, Inc. and proceeding thence along land now or formerly of said Wilton Supply Company, Inc., and land now or formerly of Earl R. Jayne and Fred W. Jayne, each in part, the following courses and distances: North 79° 51' West, 35.37 feet; North 83° 12' West, 46.39 feet; North 79° 18" West, 150.07 feet, all along a stone wall; North 73° 39' West, 12.58 feet; North 87° 56' West, 36.93 feet; North 78° 53' West, 40.74 feet; North 83° 02' 40" West, 100.01 feet; North 80° 06' 40" West, 100.10 feet; North 84° 00' West, 9.47 feet; North 67° 58' 30" West, 66.00 feet; more or less to a point and the center line of the Norwalk River; thence along said center line of said Norwalk River and land now or formerly of Earl R. Jayne and Fred W. Jayne the following courses and distances, all as shown on said map: North 4° 28' 00" East, 100.08 feet, more or less; North 15° 17' 30" East, 132.70 feet, more or less; North 1° 02' 00" West, 75.20 feet, more or less; North 8° 48' West, 56.47 feet, more or less; North 14° 22' 00" West, 5.47 feet, more or less to a point still at the center of said Norwalk River; thence along land now or formerly of Robert O. Banks and Earnest R. Rau, designated as Parcel B-1, South 73° 14' 40" East, 670.51 feet, to a point and the westerly side of said public highway, Norwalk-Danbury Road (Route U.S., #7), so-called; thence along said public highway South 16° 52' 00" West, 212.62 feet to a Connecticut Highway Department monument and thence South 19° 13' 20" West, 79.93 feet to the point or place of beginning.

TOGETHER WITH an easement for the purpose of running overhead or underground utility wires, as shown on said map, from said public highway to a point on the northerly side of the premises hereby conveyed, as also shown on said map as set forth in a certain deed recorded in Volume 362 at Page 81 of the Wilton Land Records.

TOGETHER WITH and subject to a mutual right to use the existing water and sprinkler mains and lines running from Route U.S., #7 to the existing building as set forth in said deed recorded in Volume 362 at Page 81 of the Wilton Land Records.

EXCEPTING THEREFROM all that certain piece or parcel of land as set forth in a Certificate of Taking by the State of Connecticut, Commissioner of Transportation dated April 19, 1972 and recorded in Volume 172 at Page 180 of the Wilton Land Records.

SCHEDULE B

Permitted Exceptions

1. Easement to The Connecticut Light and Power Company dated March 27, 1924 and recorded in Volume 35 at Page 310 of the Wilton Land Records.
2. Finding and Order of the State of Connecticut Water Resources Commission establishing channel encroachment line and rights related thereto, dated October 18, 1965 and recorded in Volume 115 at Page 634 of the Wilton Land Records, and as shown on Map No. 2500.
3. Mutual rights to use the existing water and sprinkler mains and lines running from Route U.S. #7 to the existing buildings upon Parcels A-1 and B-1 as shown on said filed Map No. 3609 as contained in said Deed recorded in Volume 362 at Page 81 of the Wilton Land Records.
4. Easement for utility wires as contained in a Deed from Robert O. Banks to the Perkin-Elmer Corporation dated January 12, 1981 and recorded in Volume 362 at Page 81 of the Wilton Land Records.
5. Special Permit granted by the Town of Wilton Planning and Zoning Commission recorded July 12, 1994 in Volume 913 at Page 312 of the Wilton Land Records.
6. Notice of Lease from 131 Danbury Group, LLC to Tracy Locke Partnership, L.P. dated October 28, 2002 and recorded November 22, 2002 in Volume 1456 at Page 330 of the Wilton Land Records.
7. Notice of Lease from GHP Wilton, LLC to ELRAC, LLC dba Enterprise Rent-A-Car dated May 20, 2013 and recorded May 28, 2013 in Volume 2326 at Page 47 of the Wilton Land Records.

Received for Record at Wilton, CT
On 01/19/2018 At 3:46:00 pm

Oliver A. Sobronk

AMS Acquisitions
1 Bridge Plaza North, Suite 840
Fort Lee, NJ 07024

September 28, 2023

Mr. Michael Wrinn, Town Planner
Planning & Zoning Department, Town Hall Annex
238 Danbury Road
Wilton, CT 06897

RE: 131 Danbury Road, Wilton, CT
Authorization Letter


Dear Mr. Wrinn,

131 Danbury Wilton Dev AMS LLC (an affiliate of AMS Acquisitions, LLC) has entered a contract to purchase 131 Danbury Road in Wilton, CT from FGI Wilton LLC.

131 Danbury Wilton Dev AMS LLC hereby grants our agent, Redniss & Mead, Inc. of 22 First Street, Stamford CT 06905, permission to file land use applications with the Inland Wetlands Commission, Architectural Review Board, and Planning & Zoning Commission as may be necessary to permit the contemplated redevelopment of the property into multi-family housing.

Sincerely,

131 Danbury Wilton Dev AMS LLC

BY: 

Raphael Mitnick
Principal, 131 Danbury Wilton Dev AMS LLC
Authorized Signatory

SPECIAL PERMIT DESCRIPTION: Cite specific section(s) of the Zoning Regulations and provide a detailed description of the proposed development. Attach additional sheets as required.

Section 29-10 to permit the redevelopment of 131 Danbury Road for multi-family residential

See enclosed application narrative.

131 Danbury Wilton Dev AMS LLC (as affiliate of AMS Acquisitions, LLC); ATTN Ryan Sutherland

c/o Agent: Craig J. Flaherty, Redniss & Mead,
22 First Street, Stamford, CT 06905

APPLICANT'S NAME

ADDRESS

FGI Wilton LLC

525 Homestead Ave, Mt Vernon, NY 10550

OWNER'S NAME

ADDRESS

131 Danbury Road

DE-5 (Existing), DE-5R (Proposed)

PROPERTY LOCATION

ZONING DISTRICT

2483

1026

70

1

4.75

WLR

VOLUME

PAGE

TAX MAP #

LOT #

ACREAGE

THE FOLLOWING MATERIALS ARE REQUIRED:

* Please see **SPECIAL INSTRUCTIONS FOR SUBMISSION DURING COVID** at:

[Application Forms / Materials | Wilton CT](#)

* All submitted plans and documents shall bear an **original signature, seal, and license number** of the professional responsible for preparing each item. Maps should be **folded, not rolled**.

_____ **VICINITY SKETCH** at a scale of 1"=100' or 1"=200'. Said map shall show all existing zone boundaries, existing buildings and parcels, labeled by their corresponding Tax Map and Lot Number, within 500' of the subject property.

_____ **CLASS A-2 SURVEY MAP** of the subject property

_____ **SITE DEVELOPMENT PLAN** pursuant to Section 29-11 of the Zoning Regulations

_____ **FORM B – ZONING DATA**

_____ **LIST OF PROJECT PROFESSIONALS** including name, firm, address and telephone

_____ **LETTER OF TITLE** certifying owner of record as of date of the application

_____ **PROOF OF APPLICANT'S LEGAL INTEREST** in property

_____ **LIST OF OWNERS WITHIN 500'** of any portion of subject property, sorted by Tax Map and Lot #

[See online GIS instructions at: [owner list 500 ft gis directions.pdf \(wiltonct.org\)](#)]

_____ **ANY OTHER PLAN OR DOCUMENT** as required by Zoning Regulations

_____ **ONE COPY OF THE DEED**

_____ **ELECTRONIC SUBMISSION** of all materials, **consolidated into 1 or 2 PDFs maximum**, emailed to michael.wrinn@wiltonct.org and daphne.white@wiltonct.org

_____ **\$460 FILING FEE + \$50/Unit or \$50/2000 sq. ft. (Accessory Apartment - \$260)** payable to: Town of Wilton

_____ **ENVELOPES**, addressed to each property owner within 500' of any portion of subject property.

[See "Envelopes Instructions" at: [envelopes instructions 0.pdf \(wiltonct.org\)](#)]

N/A IS THE SUBJECT PROPERTY LOCATED WITHIN THE WATERSHED BOUNDARY? YES **NO**
 _____ IS THE SUBJECT PROPERTY WITHIN THE FLOOD ZONE? **YES** NO

THE APPLICANT understands that this application is to be considered complete only when all information and documents required by the Commission have been submitted and is responsible for the payment of all legal notices incurred.

THE UNDERSIGNED WARRANTS the truth of all statements contained herein and in all supporting documents according to the best of his or her knowledge and belief; and hereby grants visitation and inspection of the subject property as described herein.

APPLICANT’S SIGNATURE DATE EMAIL ADDRESS TELEPHONE

OWNER’S SIGNATURE DATE EMAIL ADDRESS TELEPHONE

For Planning and Zoning Department Use Only:

Mandatory Referrals - Jurisdiction/Agency		
	Yes	No
Village District Design Advisory Committee (VDDAC):	<input type="checkbox"/>	<input type="checkbox"/>
Architectural Review Board (ARB):	<input type="checkbox"/>	<input type="checkbox"/>
Western Connecticut Council of Governments (WestCOG):	<input type="checkbox"/>	<input type="checkbox"/>
South Norwalk Electric and Water Company (SNEW) Designated Public Watershed:	<input type="checkbox"/>	<input type="checkbox"/>
First Taxing District Water Department Designated Public Watershed:	<input type="checkbox"/>	<input type="checkbox"/>
State-Designated Aquifer Protection Area:	<input type="checkbox"/>	<input type="checkbox"/>
Adjoining Community Notification:	<input type="checkbox"/>	<input type="checkbox"/>

Project Background & Statement of Compliance with Site Plan Approval Standards

I. Introduction

The applicant, 131 Danbury Wilton Dev AMS LLC (an affiliate of AMS Acquisitions, LLC) (the “Applicant”), seeks Site Plan and Special Permit Approval from the Planning and Zoning Commission in connection with the redevelopment of the property at 131 Danbury Road. The applicant is the contract purchaser and potential developer of the subject property. The proposal includes the removal of the existing office building and construction of a new 4 ½ -story residential building. The 4.752± acre property is designated as Tax Lot 1 on Map 70 in the DE-5 Design Enterprise District. A separate Change of Zone Application is being submitted to rezone the property to the DE-5R, Design Enterprise Residential District Overlay. The property is located on the westerly side of Danbury Road, bordered to the north by 141 Danbury Road which is currently under construction and to the south by Ring’s End and Cubesmart. The property is bound to the west by the Norwalk River.

II. Existing Conditions

131 Danbury Road is currently developed with a 3-story office building oriented in the eastern half of the property. Surface parking covers the western half of the site, extending from the existing structure to the river’s edge. The existing parking does not employ any drainage practices and stormwater sheet flows east to west, untreated into the Norwalk River. The property is served by public sewer and water.

Wetlands soils were identified in the western portion of the site along the Norwalk River by Megan B. Raymond and Mike Armstrong of SLR on August 3, 2023, and are depicted on the ALTA/NSPS Land Title Survey prepared by Blew and Associates. The western portion of the site falls within the AE Zone as depicted on the Federal Emergency Management Agency – Flood Insurance Map Community No. 090020 Panel 391 Suffix F, effective date June 18, 2010. The base flood elevation (BFE) of the special flood hazard zones is 146 feet NAVD.

III. Proposed Conditions

The 2019 Plan of Conservation and Development (the “POCD”) noted that “the community has increasingly expressed interest in increasing housing type variety and price points in design- and location-appropriate ways to provide greater diversity and liquidity to the overall housing stock, particularly in attracting and meeting the needs of occupants at different life and employment stages.” This is in conjunction with the observation that the “relatively high price of housing coupled with an available housing stock of detached single-family homes has more recently contributed to lower in-migration of younger working-age people and has increased the out-migration of empty-nesters and retirees.” The town has recently begun addressing these concerns with the approval of multi-family projects. This proposal similarly responds to these trends and the goals of the POCD.

The proposed multi-family residential building consists of 208 apartments: 95 one-bedroom, 105 two-bedroom, and 8 three-bedroom. 21 of the proposed units (10%) will be designated as Affordable Housing Units as defined in Town's Affordable Housing Requirements (Section 29-5.B.10). A total of 343 parking spaces are located on the ground floor with 207 covered spaces below the elevated building and another 114 uncovered surface spaces. There are 22 tandem parking spaces indicated that are not counted towards the zoning compliant requirement of 321. Roughly 10 electric vehicle parking spaces are proposed, and another 24 parking spaces will be equipped with the conduit and infrastructure needed to convert them in the future.

The proposed structure is designed to be compliant with Section 29-9.F. of the Town of Wilton Zoning Regulations, Development in Floodplain Areas. The first floor of the main building is set at 157.5', the first floor of the amenity building is set at 155.5', both are well above the Base Flood Elevation of 146'. All supporting mechanical systems will be placed at least a foot above the Base Flood Elevation in compliance with Connecticut State Building Code. The parking level which includes access to the building is permissibly positioned just below the BFE with ground elevations on the lower-level ranging from 143' to 146'. The ground elevations were carefully designed to not impinge or reduce the storage or conveyance capacity of the floodplain. SLR presents floodplain earthwork calculations on Sheet FP indicating a de minimis cut of 72 cubic yards within the floodplain, eliminating the need for compensatory storage.

The proposed building is thoughtfully designed to be sensitive to the views from Danbury Road while greatly improving the buffer to the Norwalk River. The primary design concept for this development is to create a building in the foreground of the site, facing onto Danbury Road, that adds architectural value to the streetscape and visually controls the scale of the development. Secondary design goals included curating an interesting and dramatic entry sequence and creating a building that provides exceptional amenities and practical living for its residents.

With its pitched roofs, stone foundation and wood frame, the two-story structure in the foreground is meant to evoke a more traditional Connecticut architectural vernacular while being treated in a more modern way with large, glazed panels and the use of cross laminated timber. The four-story structure is organized around a central courtyard. It is simply modulated with the use of recessed balconies and a change in materials. A change in color adds to the pattern making and helps control the perceived mass of the building. These two structures are meant to complement each other as a foreground and backdrop and appropriately fit the site.

The proposed improvements along the Norwalk River relocate the surface parking roughly 50' farther from the resource, replacing asphalt parking with a landscaped buffer and amenity area. Plantings along the perimeter of the site are designed to provide a buffer between the surface parking and neighboring properties. The improvements within the upland review area are intended to benefit the Norwalk River and will allow tenants the ability to passively enjoy the resource.

IV. Standards of Review

The proposed redevelopment is in conformance with the approval standards set forth in Sec. 29-11.A.9 of the Town of Wilton Zoning Regulations as follows:

In reviewing and acting upon an application for Site Plan approval, the Commission shall take into consideration the health, safety, and welfare of the public in general, the immediate neighborhood in particular, and the following general factors:

- a. *The general conformity of the Site Plan with the intent of the Town's Plan of Development; however, the Plan of Development shall not take precedence over specific provisions of these Regulations.*

The proposed development is consistent with the guidance from the POCD to increase the variety of available housing types and price points. The POCD also identifies Danbury Road, south of Wolfpit Road, as an appropriate location for multifamily housing. This use is consistent with surrounding multi-family residential developments including the multi-family housing project under construction at 141 Danbury Road. Careful thought was put into the design of the building and layout of the site to maintain consistency along Danbury Road while also protecting the Town's natural resources.

The proposed development furthers several objectives and strategies in the Town's Plan of Conservation and Development. The proposal will:

- "Increase the availability of multi-family housing and smaller housing units;"
- "Diversify the price points of Wilton's housing stock" with 10% of units meeting Wilton's definition of an "Affordable Housing Unit."
- "Promote universal design techniques" by providing accessible units and an accessible site.
- "Support and maintain households at various life-cycle stages" by attracting young professionals and empty nesters.

The proposed development is also consistent with the goals laid out in the Natural and Historical Environment Chapter of the POCD. The proposal includes the removal of 27,000± square feet of paved parking out of the Upland Review Area. An enhanced landscaped buffer is proposed around the Norwalk River with paths and sitting areas designed for the passive enjoyment of the tenants. The Water Quality Best Management Practices employed across the site are designed to treat the stormwater tributary to the Norwalk River, helping to protect one of Wilton's significant natural resources.

- b. *The arrangement of buildings, structures, and uses on the site.*

The majority of the proposed building is generally located further from Danbury Road than the existing structure, maintaining a consistent street wall along the road. A smaller "jewel box" structure is set in the foreground, east of the drop off area, connecting to the primary

structure via a second-story bridge. The new structure provides 80'+ of separation to the Norwalk River in the rear of the property. The setback allows for the existing parking, which is currently maintained up to 10' from the river, to be converted to a landscaped amenity area providing a greatly enhanced natural buffer. Pathways and seating areas provide access for building occupants to the passively enjoy the resource.

Most of the parking is located under the building. Surface parking, north and south of the building is screened from the neighboring properties with a landscaped buffer located along either property line.

- c. *The adequacy of design of the interior vehicular circulation system, to provide safe and convenient access to all structures, uses, parking spaces and loading spaces.*

The site is designed to provide safe and efficient circulation around the building and site. The site is accessed off Danbury Road with the north drive serving as the entrance and the south drive serving as the exit. Connections between the two drives are provided at the entrance where a short drive facilitates drop-off/pick-up and at the rear where the covered parking is accessed. The drive at the entrance allows vehicles to quickly enter and exit the site without having to drive around the building. Surface parking is located along both drives.

Most of the building is elevated above the first-floor parking. Three different access points are provided along the covered parking for tenants to enter the building. Two loading spaces are located at the western edge of the covered parking next to an elevator for easy access.

- d. *Provision for safe pedestrian movement within and adjacent to the site.*

Pedestrians can access the building at the three access points along the covered parking in addition to the front entrance and jewel box entrance. Tenants can move between the two buildings on the ground level across the drive or via the second-story bridge. The drive in front of the building utilizes bollards and planters as traffic calming measures. A concrete walk connects the rear of the building to the walks, seating areas and plaza proposed along the Norwalk River.

New sidewalks are proposed in front of the building along Danbury Road with crosswalks across each drive, and a walk will connect from the road to the building. The new walk in front of the site will connect to the new one being built in front of 141 Danbury Road to the north. These new walks will hopefully be the anchor to facilitate future extensions on the west side of Danbury Road in this area.

- e. *The adequacy of access for fire, police and ambulance services.*

The proposed building will be fully compliant with all Building, Health, Safety, Fire and Accessibility Codes and is intended to be fully sprinklered. All sides of the building will be accessible by emergency vehicles via the asphalt drives north and south of the building and the

reinforced turf drive to the west. Concrete bump outs are located along the turf drive to provide stable surfaces for the outriggers of a ladder truck. Another drive is provided at the front entrance that provides immediate access to the building. Vehicle turning movement diagrams prepared by SLR indicate the adequacy of the site design to accommodate delivery trucks and emergency vehicles.

- f. *The adequacy of design of the storm drainage system to accommodate any increase in storm water runoff and to minimize soil erosion and sedimentation.*

The Drainage Report prepared by SLR concludes the proposed drainage design does not result in negative downstream impacts and mitigates impact to water quality conforming with the regulations. Under existing conditions, the surface parking and other impervious surfaces drains directly into the Norwalk River untreated. The redevelopment results in a decrease in impervious coverage of over 10,000 square feet over existing conditions. The proposed drainage design includes catch basins with 2-foot sumps, subsurface infiltration systems with isolator rows for water quality treatment, water quality basins, permeable pavers, covered parking, and reinforced turf. The result of the design is a system that will reduce peak flow rates through the 100-year storm while also vastly improving the quality of water leaving the site and reaching the Norwalk River.

- g. *The location, intensity and direction of outdoor lighting and the proposed time for its use.*

The site lighting and optics were designed to provide adequate, safe illumination of the exterior vehicular and pedestrian spaces while enhancing the visual comfort, by reducing glare, for drivers and pedestrians. The pole mounted luminaires, light bollards and wall mounted sconces/ down lights are full cut-off and dark skies compliant. Pole mounted luminaires include house side shields that prevent light spread onto adjacent properties. Pole mounted lights have been spaced along the on-grade parking areas (north and south of the proposed building) and within the drop-off area to illuminate the parking stalls and drive isles with foot candles ranging from 1.3fc up to 4.6fc. On the rear of the proposed building, the on-grade parking stalls are illuminated with the use of building mounted downlights with footcandle ranges between 1.7fc and 2.6fc. In the rear of the site, along the proposed pedestrian pathway and small seating areas, light bollards are placed to provide safe, but subtle illumination with foot candles in ranges between 1.0fc and 2.6fc. All site lighting has the ability to be placed on time-controlled dimmers and motion sensors.

- h. *The size, location and type of outdoor storage facilities, including dumpsters.*

Trash will be collected and stored within the garage as indicated on architectural plan Sheet A1.01. Dumpsters will be rolled outside on collection day to be picked up and then returned to the trash room.

- i. *The size, location and type of signs, and their appropriateness to the neighborhood.*

The location of project signage is indicated along each drive accessing Danbury Road. Each consists of 7" tall aluminum letters on a 2' X 6' aluminum back plate mounted to the proposed fieldstone walls. Both signs are appropriately sized to alert drivers on Danbury Road to the location of the building and its main entrance. Soft up lights are used to illuminate the signage. The design of the signage is conceptual and will be finalized once the building is branded, at which time the Applicant reserves the right to request approval from the Planning & Zoning Commission for an Alternative Signage Program.

- j. *The adequacy of the landscaping treatment, including any buffers and other screening.*

Significant plantings are proposed along the Norwalk River, between it and the new development. The plantings there consist of native species intended to restore and enhance the riparian buffer. Per the Wetland and Watercourse Delineation Impact Assessment prepared by SLR, "the addition of these native species will also attract pollinators and provide enhanced wildlife habitat in addition to a buffer between the proposed site improvements and adjacent regulated resource areas."

Douglas fir and Norway Spruce are proposed along the north and south property lines, screening the surface parking from the neighboring properties. A combination of trees, shrubs and wildflower/meadow mix are proposed along Danbury Road, providing nice variety with little manicured lawn. The variety of landscaping in front of the building will help screen the larger building in the background while framing the "jewel box" structure in the foreground. Refer to the Site Plan - Landscaping prepared by SLR for more information on the proposed landscaping.

Schedule A: Statement of Compliance with Special Permit Standards for Approval

I. Introduction

The applicant, 131 Danbury Wilton Dev AMS LLC (an affiliate of AMS Acquisitions, LLC) (the “Applicant”), seeks Site Plan and Special Permit Approval from the Planning and Zoning Commission in connection with the redevelopment of the property at 131 Danbury Road. The applicant is the contract purchaser and potential developer of the subject property. The proposal includes the removal of the existing office building and construction of a new 4 ½ -story residential building. The 4.752± acre property is designated as Tax Lot 1 on Map 70 in the DE-5 Design Enterprise District. A separate Change of Zone Application is being submitted to rezone the property to the DE-5R, Design Enterprise Residential District Overlay. The property is located on the westerly side of Danbury Road, bordered to the north by 141 Danbury Road which is currently under construction and to the south by Ring’s End and Cubesmart. The property is bound to the west by the Norwalk River.

II. Existing Conditions

131 Danbury Road is currently developed with a 3-story office building oriented in the eastern half of the property. Surface parking covers the western half of the site, extending from the existing structure to the river’s edge. The existing parking does not employ any drainage practices and stormwater sheet flows east to west, untreated into the Norwalk River. The property is served by public sewer and water.

Wetlands soils were identified in the western portion of the site along the Norwalk River by Megan B. Raymond and Mike Armstrong of SLR on August 3, 2023, and are depicted on the ALTA/NSPS Land Title Survey prepared by Blew and Associates. The western portion of the site falls within the AE Zone as depicted on the Federal Emergency Management Agency - Flood Insurance Map Community No. 090020 Panel 391 Suffix F, effective date June 18, 2010. The base flood elevation (BFE) of the special flood hazard zones is 146 feet NAVD.

III. Proposed Conditions

The 2019 Plan of Conservation and Development (the “POCD”) noted that “the community has increasingly expressed interest in increasing housing type variety and price points in design- and location-appropriate ways to provide greater diversity and liquidity to the overall housing stock, particularly in attracting and meeting the needs of occupants at different life and employment stages.” This is in conjunction with the observation that the “relatively high price of housing coupled with an available housing stock of detached single-family homes has more recently contributed to lower in-migration of younger working-age people and has increased the out-migration of empty-nesters and retirees.” The town has recently begun addressing these concerns

with the approval of multi-family projects. This proposal similarly responds to these trends and the goals of the POCD.

The proposed multi-family residential building consists of 208 apartments: 95 one-bedroom, 105 two-bedroom, and 8 three-bedroom. 21 of the proposed units (10%) will be designated as Affordable Housing Units as defined in Town's Affordable Housing Requirements (Section 29-5.B.10). A total of 343 parking spaces are located on the ground floor with 207 covered spaces below the elevated building and another 114 uncovered surface spaces. There are 22 tandem parking spaces indicated that are not counted towards the zoning compliant requirement of 321. Roughly 10 electric vehicle parking spaces are proposed, and another 24 parking spaces will be equipped with the conduit and infrastructure needed to convert them in the future.

The proposed structure is designed to be compliant with Section 29-9.F. of the Town of Wilton Zoning Regulations, Development in Floodplain Areas. The first floor of the main building is set at 157.5', the first floor of the amenity building is set at 155.5', both are well above the Base Flood Elevation of 146'. All supporting mechanical systems will be placed at least a foot above the Base Flood Elevation in compliance with Connecticut State Building Code. The parking level which includes access to the building is permissibly positioned just below the BFE with ground elevations on the lower-level ranging from 143' and 146'. The ground elevations were carefully designed to not impinge or reduce the storage or conveyance capacity of the floodplain. SLR presents floodplain earthwork calculations on Sheet FP indicating a de minimis cut of 72 cubic yards within the floodplain, eliminating the need for compensatory storage.

The proposed building is thoughtfully designed to be sensitive to the views from Danbury Road while greatly improving the buffer to the Norwalk River. The primary design concept for this development is to create a building in the foreground of the site, facing onto Danbury Road, that adds architectural value to the streetscape and visually controls the scale of the development. Secondary design goals included curating an interesting and dramatic entry sequence and creating a building that provides exceptional amenities and practical living for its residents.

With its pitched roofs, stone foundation and wood frame, the two-story structure in the foreground is meant to evoke a more traditional Connecticut architectural vernacular while being treated in a more modern way with large, glazed panels and the use of cross laminated timber. The four-story primary structure is organized around a central courtyard. It is simply modulated with the use of recessed balconies and a change in materials. A change in color adds to the pattern making and helps control the perceived mass of the building. These two structures are meant to complement each other as a foreground and backdrop and appropriately fit the site.

The proposed improvements along the Norwalk River relocate the surface parking roughly 50' farther from the resource, replacing existing asphalt parking in this area with a landscaped buffer and amenity area. Plantings along the perimeter of the site are designed to provide a buffer between the surface parking and neighboring properties. The improvements within the upland review area are intended to benefit the Norwalk River and will allow tenants the ability to passively enjoy the resource.

IV. Standards of Review

The proposed redevelopment is in conformance with the approval standards set forth in Sec. 29-10.A.9 of the Town of Wilton Zoning Regulations as follows:

Standards for Approval: Unless otherwise specified, a use allowed by Special Permit shall conform to all requirements of the zoning district in which it is proposed to be located and the standards contained herein. The Commission may grant a Special Permit after considering the health, safety and welfare of the public in general, and the immediate neighborhood in particular, as well as the following factors:

- a. *The location and size of the proposed use; the nature and intensity of the operations associated with the proposed use; the size, shape and character of the site in relation to the proposed use.*

The majority of the proposed building is generally located further from Danbury Road than the existing structure, maintaining a consistent street wall along the road. A smaller “jewel box” structure is set in the foreground, east of the drop off area, connecting to the primary structure via a second-story bridge. The new structure provides 80'+ of separation to the Norwalk River in the rear of the property. The setback allows for the existing parking, which is currently maintained up to 10' from the river, to be converted to a landscaped amenity area providing a greatly enhanced natural buffer. Pathways and seating areas provide access for building occupants to the passively enjoy the resource. The proposed residential use is consistent with the neighboring residential communities along Danbury Road.

- b. *The location, type, size and height of the buildings and other structures associated with the proposed use in relation to one another and in relation to neighborhood development.*

The location of the building is sensitive to views from Danbury Road, maintaining setbacks from the road consistent with the neighboring properties, while also providing a significant buffer to the Norwalk River. The proposed “jewel box” two-story structure in the foreground is approximately 44' tall and located 75' from the front property line. The 4-½ story structure is approximately 65' tall, consistent with the requirements of the DE-5R Zone, and set 152'± from the front property line. It is simply modulated with the use of recessed balconies and a change in materials. A change in color adds to the pattern making and helps control the perceived mass of the building. These two structures are meant to complement each other as a foreground and backdrop and appropriately fit the site. The proposed building is of a similar scale to the adjacent residential apartment building under construction to the north.

The applicant appeared before the Architectural Review Board on November 9, 2023 and received the Findings/Recommendation Report on December 5, 2023. Several revisions were made to the design based on the comments received from the board. The revisions include:

- The walk along Danbury Road was pulled away from the edge of road to provide a nicer pedestrian experience.
 - A potential connection is shown between the proposed river walk on the subject site and 141 Danbury Road property to the north. This is dependent on cooperation between the property owners.
 - New evergreen plantings are proposed along the northeast corner of the building. The added height of the plants will improve privacy for the first floor unit facing Danbury Road.
 - Sheets A8.01 – Wall Detail and A8.02 – Wall Detail @ Parapet were added to the architectural drawing set to clearly detail how the vertical siding ends at the cornice/parapet line.
 - The siding along the west side of the building was revised to incorporate the Shou Sugi Ban Siding used on the east face. The change in materials was designed to soften the appearance of the west face.
- c. *The impact of the proposed use on traffic safety and circulation on neighborhood streets; the ability of such streets to adequately accommodate the traffic to be generated by the proposed use.*

As stated in the enclosed Traffic Impact Study prepared by SLR, “the future traffic generated by the residential units is expected to be similar to the amount of traffic currently generated by the site’s existing use per industry data.” The results of the study show that the road “is expected to accommodate the redevelopment in a similar fashion in terms of traffic conditions as occurs today.”

- d. *The existing and future character of the neighborhood in which the use is proposed to be located, and the compatibility of the proposed use with the neighborhood.*

The proposed development is consistent with the guidance from the POCD to increase the housing stock variety and price points. The POCD also identifies Danbury Road, south of Wolfpit Road, as an appropriate location for multifamily housing. This use is consistent with surrounding multi-family residential developments including the multi-family housing project under construction at 141 Danbury Road. Careful thought was put into the design of the building and layout of the site to maintain an aesthetically appropriate scale along Danbury Road while also protecting the Town’s natural resources to the rear.

- e. *The impact of the proposed use on the natural characteristics of the site or the surrounding environment.*

The proposed improvements were thoughtfully laid out to provide meaningful separation to the Norwalk River. Existing surface parking that previously dominated the upland

review area is being replaced with a landscaped amenity area designed to restore the natural buffer and provide for the passive enjoyment of the resources. The walking paths, seating areas, and overlook plaza to be installed in the upland review area are all constructed out of pervious materials. Similarly, the fire access required around the western side of the building is reinforced turf and fully pervious. Further buffer enhancements are achieved by removing invasive species and restoring the native riparian buffer. The proposed improvements result in a decrease in impervious coverage of 26,971 sf in the upland review area and shifts parking 50'+ farther away from the river.

The proposed improvements vastly improve the quality of runoff reaching the Norwalk River. Currently, the surface parking lot drains directly into the river with little more than a 10' buffer between the edge of parking and the River. Under proposed conditions, stormwater from the building, drives and surface parking will receive treatment from infiltration systems and water quality basins designed to infiltrate the Water Quality Volume.

- f. *The adequacy of water, sewer, drainage and other public facilities to accommodate the proposed use.*

The existing public infrastructure will accommodate the proposed development. The Drainage Report prepared by SLR demonstrates the proposed drainage design does not result in negative downstream impacts and mitigates impact to water quality conforming with the regulations. The proposed design includes catch basins with 2-foot sumps, subsurface infiltration systems with isolator rows for water quality treatment, water quality basins, permeable pavers, covered parking, and reinforced turf. The result of the design is a system that will reduce peak flow rates through the 100-year storm while also vastly improving the quality of water leaving the site and reaching the Norwalk River.

Both the public water and sewer serving the site have adequate capacity to serve the new residential development. A letter was provided by Aquarion (dated September 29, 2023) confirming that they have sufficient water supply to meet the estimated residential water demand. Per the Downstream Sewer Capacity Analysis Memo prepared by SLR, dated November 27, 2023, "the existing 24-inch main in Danbury Road has ample capacity to accommodate the peak sewer discharge from 131 Danbury Road."

- g. *Where the proposed use involves the conversion of a structure designed and built originally for other uses, the adaptability of the structure to the proposed use, particularly in relation to the public health and safety.*

No conversion is proposed.

Schedule B: Environmental Impact Statement

All applications for Special Permits shall include information for the purpose of compiling a complete impact assessment. The statement shall address at least the following:

- a. *The extent to which the proposed development is compatible with the objectives of the Town's Plan of Development.*

The proposed development furthers several objectives and strategies in the Town's Plan of Conservation and Development. The proposal will:

- "Increase the availability of multi-family housing and smaller housing units;"
- "Diversify the price points of Wilton's housing stock" with 10% of units meeting Wilton's definition of an "Affordable Housing Unit."
- "Promote universal design techniques" by providing accessible units and a fully accessible site.
- "Support and maintain households at various life-cycle stages" by attracting young professionals and empty nesters.

The proposed development is also consistent with the goals laid out in the Natural and Historical Environment Chapter of the POCD. The proposal includes the removal of 27,000± square feet of paved parking from the Upland Review Area. An enhanced landscaped buffer is proposed around the Norwalk River with paths and sitting areas designed for the passive enjoyment of the tenants. The Water Quality Best Management Practices employed across the site are designed to treat the stormwater tributary to the River, helping to protect one of Wilton's significant natural resources.

- b. *The extent to which any sensitive environmental features on the site may be disturbed and what measures shall be taken to mitigate these impacts. Consideration shall be given to steep slopes, (including erosion control), wetlands, drainage ways and vegetation and any other land feature considered to be significant.*

The proposed redevelopment represents a significant improvement within the Upland Review Area. The planting plan was developed to restore and enhance the riparian buffer between the Norwalk River and proposed development. Providing a robust buffer and greater separation between the river and developed site will negate any potential impacts resulting from the proposed improvements. Similarly, the proposed drainage significantly improves the quality of stormwater reaching the river. Sediment and Erosion Controls are employed across the site to minimize impacts from short-term disturbance during construction and prevent sediment from entering the wetlands and river. Per the Wetland and Watercourse Delineation Impact Assessment prepared by SLR, "the proposed project avoids significant direct wetland impacts, includes comprehensive stormwater management and sediment and erosion control, includes a riparian enhancement plan and reduces

overall impervious area on the site as well as a significant reduction in the Upland Review Area.”

- c. *The impact of the proposed development on the water supply, sanitary sewer and storm drainage system of the Town and an indication of improvements that may be necessitated by the project.*

The existing public infrastructure will accommodate the proposed development. The Drainage Report prepared by SLR demonstrates the proposed drainage design does not result in negative downstream impacts and mitigates impact to water quality conforming with the regulations. The proposed design includes catch basins with 2-foot sumps, subsurface infiltration systems with isolator rows for water quality treatment, water quality basins, permeable pavers, and reinforced turf. The result of the design is a system that will reduce peak flow rates through the 100-year storm while also vastly improving the quality of water leaving the site and reaching the Norwalk River.

Both the public water and sewer serving the site have adequate capacity to serve the new residential development. A letter was provided by Aquarion (dated September 29, 2023) confirming that they have sufficient water supply to meet the estimated residential water demand. Per the Downstream Sewer Capacity Analysis Memo prepared by SLR, dated November 27, 2023, “the existing 24-inch main in Danbury Road has ample capacity to accommodate the peak sewer discharge from 131 Danbury Road.”

- d. *Analysis of vehicular and pedestrian traffic impact on the street system and proposed methods of handling situations where the street system is found to be inadequate.*

As stated in the enclosed Traffic Impact Study prepared by SLR, “the future traffic generated by the residential units is expected to be similar or slightly less than the amount of traffic currently generated by the site’s existing building.” The results of the study show that the road “is expected to accommodate the redevelopment in a similar fashion in terms of traffic conditions as occurs today.”

- e. *Statement of how the proposed project will affect various Town services such as police, fire, schools and recreation.*

The proposed building will be fully compliant with all Building, Health, Safety, Fire and Accessibility Codes and is intended to be fully sprinklered. All sides of the building will be accessible by emergency vehicles via the asphalt drives north and south of the building and the reinforced turf drive to the west. Concrete bump outs are located along the turf drive to provide stable surfaces for the outriggers of a ladder truck.

Given the mix of units, most of which are one and two-bedroom, the proposed development is expected to primarily attract young professionals and empty nesters. Per the Estimate of School Aged Children in Multifamily Housing, prepared by Redniss & Mead, the 208-unit residential building is anticipated to yield 21 school-age children.

Apartment buildings with one and two-bedroom units tend to be net tax revenue positive as the number of school age children is at a much lower ratio than the town background of single-family residences.

The proposed development includes recreational space for tenants along the Norwalk River and in the courtyard internal to the building. Both these areas will provide ample passive recreational space.

No adverse impacts to community resources and town services are expected. The added tax revenue and new residential units are expected to positively impact the Town.

f. Alternatives to mitigate adverse impacts.

Given the existing conditions on-site, the proposed redevelopment of the site positively impacts the Norwalk River and surrounding area. The property was developed to restore the riparian buffer, improve the quality of stormwater leaving the site, and protect the Norwalk River all while providing an aesthetically pleasing design that fits the character of the surrounding area. One alternative implemented to mitigate adverse impacts was the use of stabilized turf for emergency access behind the building. Originally, an asphalt drive was provided around the building for both emergency access and trash pick-up. On further review, the design pushed the drive too close to the river. Instead, trash pick-up was relocated to the front of the building and porous stabilized turf was employed instead of standard asphalt.

Include the following data on the required Site Development Plan, as well.

131 Danbury Road

PROPERTY ADDRESS

4.75 acres

LOT ACREAGE

DE-5 (Existing), DE-5R (Proposed)

ZONING DISTRICT

292 feet

LOT FRONTAGE

	PER ZONING REGS (MAX OR MIN ALLOWED)	EXISTING	PROPOSED	TOTAL
GROSS FLOOR AREA [SF]	N/A	51,496 SF	249,210 SF	249,210 SF
BUILDING FOOTPRINT [SF]	82,794 SF	41,481 SF	82,684 SF	82,684 SF
BUILDING COVERAGE [SF/%] (round up)	40%	20%	40%	40%
BUILDING HEIGHT [FT - Story]	65 FT 4.5 Stories	26.5 FT 3 Stories	4 Stories / 55 FT 4.5 Stories / 65 FT	4 Stories / 55 FT 4.5 Stories / 65 FT
FLOOR AREA RATIO (F.A.R.)	N/A	0.249	1.204	1.204
PARKING SPACES (round up)	321 Spaces	223 Spaces	321 Spaces	321 Spaces
LOADING SPACES	N/A	3	0	0
SITE COVERAGE [SF/%]	155,239 SF 75%	140,404 SF 68%	143,855 SF 70%	143,855 SF 70%

OFF-STREET PARKING AND LOADING CALCULATIONS

Please provide the specific calculation used to determine the minimum required off-street parking and loading spaces pursuant to the Zoning Regulations.

PARKING CALCULATION (Use separate page, if necessary)

$(95 \text{ 1-BDR} \times 1 \text{ Space}) + ((105 \text{ 2-BDR} + 8 \text{ 3-BDR}) \times 2 \text{ Spaces}) = 321 \text{ Spaces}$

LOADING CALCULATION (Use separate page, if necessary)

N/A

PLAN OF CONSERVATION AND DEVELOPMENT

Please indicate on separate page how this proposal complies with the Plan of Conservation and Development.

THE UNDERSIGNED WARRANTS the truth of all statements contained herein:



 APPLICANT'S SIGNATURE

November 30, 2023

 DATE

Town of Wilton Plan of Conservation and Development Guidance

131 Danbury Road

November 30, 2023

The text provided below are direct quotes from Wilton's Plan of Conservation and Development which clearly articulate a vision, and the explanation for same, that increases housing type diversity at varied price points, encourages economic development, preserves natural resources, and protects lower density single-family neighborhoods. All of which align with and are consistent with the proposed rezoning to DE-5R overlay and redevelopment of 131 Danbury Road as described in this application.

Chapter 2 – Wilton Today

Page 8: Demographics

The relatively high price of housing coupled with an available housing stock of detached single-family homes has more recently contributed to lower in-migration of younger working-age people and has increased the out-migration of empty-nesters and retirees.

Page 8: Housing

In more recent years, the community has increasingly expressed interest in increasing housing type variety and price points in design- and location-appropriate ways to provide greater diversity and liquidity to the overall housing stock, particularly in attracting and meeting the needs of occupants at different life and employment stages.

Page 11: Residential Buildout

There is currently no vacant land that is specifically zoned for multifamily housing, though multifamily housing of varying styles, densities, and price points can be constructed in several existing residential and/or business districts.

Page 13: Natural Resources

Wilton is situated at the heart of the Norwalk River Valley and enjoys exceptional access to natural resources, flora and fauna, making stormwater drainage, potable water access, water quality and quantity, and aquifer protection key considerations in future Town conservation and development.

Chapter 3 – Vision and Plan

Page 21

A Wilton where new housing typologies and mixed-use designs emerge through organic means to provide desired and versatile living, working, shopping, and entertaining opportunities and experiences. A Wilton where its natural and historical environments are preserved, integrated, and improved to become sought-after design features, community amenities, and regional attractions.

Page 23: Wilton 2029 Plan Overarching Theme, Human and Economic Environment

Wilton will support diverse housing types while protecting its low-density residential neighborhoods.

- 1) Continue to increase housing options to benefit the shared interests of the Town's residential and commercial communities
- 2) Preserve and protect Wilton's established rural and lower-density residential neighborhoods

Chapter 4 – Natural and Historical Environment

Page 31: Goal 2: Protect Wilton's abundant natural resources

Wilton contains numerous sensitive water resources that provide drinking water for residents and neighboring communities. As economic development and housing opportunities are pursued, particularly in the southern Danbury Road corridor and Wilton Center, efforts should be made to protect and improve water quality.

Chapter 5 – Human and Economic Environment

Page 44: Goal 1

Continue to increase housing options to benefit the shared interests of the Town's residential and commercial communities.

Page 45-46: Issues and Trends

Wilton's population is growing slowly and aging.

- The Town's population growth rate has slowed and stabilized. The demographics have shifted and reflect trends in the region and State, outside of urban areas, most notably an increase in population age and decrease in younger workers and school-aged population.
- Homeowners rely on a strong housing market to sell their single-family homes, and an adequate supply of smaller units to allow them to stay in Town as they enter the market or age.
- According to the EDC Analytical Survey, downsizing and an empty nest (children having left the household) were the top two drivers for property sales. The limited number of smaller and lower-cost housing options in Wilton may cause many of these residents to move outside of town, or age-in-place in their larger single-family homes.

Page 48:

Wilton needs a greater variety of housing types. Wilton residents are generally open to diversifying housing options, provided new housing development occurs in design-compatible areas with supporting infrastructure and respects the expectations of existing low-density neighborhoods.

- The 2011 Town Senior Survey indicated that more than 75% of Wilton seniors more than 75 years of age live in a single-family home and 60% live on a property of 2 acres or more.

- About 60% of Senior Survey respondents expect that their projected income in retirement will not be sufficient to allow them to continue to live in Wilton.
- Demand for smaller and more affordable homes is likely to grow in the coming years with the aging of the large “baby boom” generation into their 60s and 70s.
- According to planning surveys, 84% of respondents believe that Wilton should try to attract more young professionals.
- About 60% of survey respondents support the development of housing options that are affordable to households making less than 80% of the area median income (AMI).
- About 70% of public survey respondents supported additional residential development in Wilton Center. There was also general support for more residential development on Danbury Road, with the highest levels of support on Danbury Road south of Cannondale, and in Georgetown.

Page 49: Objectives and Strategies

1.1 Increase the Availability of Multi-Family Housing and Smaller Housing Units

Diversifying the Town’s housing stock is a top community goal for the next decade. This diversification is focused on creating smaller housing units that can support a range of life stages and includes multi-family apartments, condominiums, and smaller single-family homes. Multi-family housing is currently permitted in several business districts, and assisted living and congregate housing is permitted in certain residential zones under more strict requirements. The greatest opportunity to diversify Wilton’s housing stock, achieve housing goals, smartly grow population, enable more of Wilton’s workforce to live in Town, and foster a vibrant and socio-economically diverse local community is with regulatory changes and zoning incentives encouraging property redevelopment where development capacity and access to utility and transportation infrastructure exists into design-appropriate, attractive, and fiscally-prudent multi-family housing and smaller housing units. Policies directed toward reasonable population growth rates will also support the economic goals of this Plan by providing a larger consumer and employee base for businesses, improved economic activity, and higher property values, which will provide additional property tax revenue to the Town.

- Encourage smaller-scale, lower cost, and/or multi-family housing, whether as transit-oriented, stand-alone, or mixed-use development, to serve the entire Wilton community, including younger working age and older populations whose housing and affordability needs overlap and for whom access to transit and services is important. Target this housing in Wilton Center, Georgetown, train station areas, and Danbury Road south of Cannon Road.
- Increase permitted residential density in the village centers and along Danbury Road where development capacity and supportive infrastructure is available or appropriately expanded.

Page 55: Objectives and Strategies

3.2 Support the redevelopment of underperforming commercial properties.

Wilton has little vacant commercially-zoned land that can support new development in current configurations. In order to grow the commercial component of the tax base, Wilton will need to promote the redevelopment of underperforming properties into higher and better uses, including by consolidation where appropriate to achieve zoning goals. With limited projected demand for additional office space during the next five years, vacant older office and retail buildings are likely to have the greatest potential for adaptive reuse or redevelopment over the coming decade.

Chapter 6 – Built Environment

Page 67

Danbury Road has distinct segments, each with differing land use patterns, natural features, and historic resources. Future development should align with the unique features of each segment.

Norwalk to Wolfpit Road

- Already fully-developed with commercial retail, office, industrial and warehouse properties and an overall higher-density of housing than elsewhere in Town, the primary focus in this area may be supporting existing development or redevelopment for mixed-use and higher-intensity uses on Danbury Road. There is public support for commercial and mixed-use development in this area, including the highest levels of support for apartments and condominiums (though, still less than 50% support).
- Some areas of this section also abut or drain directly into the Norwalk River, making it important to address water quality, wetlands, conservation and flood issues proactively in assessing development strategies.



Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

Prepared for:

Ryan Sutherland, AMS Acquisitions Management Corporation

One Bridge Plaza North, Suite 840
Fort Lee, New Jersey 07024

Prepared by:

SLR International Corporation

99 Realty Drive, Cheshire, Connecticut, 06410

SLR Project No.: 141.21543.00001

October 23, 2023

Revised November 27, 2023

Drainage Report

Proposed Multifamily Development
131 Danbury Road
Wilton, Connecticut
October 23, 2023
SLR #141.21543.00001

This Drainage Report has been prepared in support of the proposed multifamily development on Danbury Road in the town of Wilton, Connecticut. This redevelopment project will add a new building and demolish the existing building and reconfigure the parking lot and all associated site infrastructure.



Figure 1 – 131 Danbury Road, MBL: 70-1



Table 1 – Stormwater Data

Parcel Size Total	4.75 acres
Existing Impervious Area (Watershed Area)	3.23 acres
Proposed Impervious Area (Watershed Area)	2.97 acres
Soil Type (Hydrologic Soil Group)	"B/D," "C," and "D"
Existing Land Use	Open space, building, and impervious
Proposed Land Use	Open space, building, and paved/impervious
Design Storm for Stormwater Management	No increases in peak rates of runoff for the 2-, 10-, 25-, 50-, and 100-year storms; Connecticut Department of Energy & Environmental Protection (CTDEEP) water quality flow (WQF) treatment, water quality volume (WQV)
Water Quality Measures	Catch basins with 2-foot sumps, detention/infiltration storage for WQV, an isolator row within the underground infiltration systems, permeable pavers, and water quality basins
Design Storm for Storm Drainage	25-year storm
Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas	Area of Minimal Flood Hazard (Zone X), Area of Undetermined Flood Hazard (Zone D), Special Flood Hazard Areas with Base Flood Elevation (Zone AE) and Regulatory Floodway
Connecticut Department of Energy & Environmental Protection Aquifer Protection Areas	None

Stormwater Management Approach

The proposed stormwater management system for the project focuses on providing water quality management while attenuating proposed peak flows. Water quality treatment in accordance with the CTDEEP requirements for WQV and WQF is provided. The proposed stormwater treatment train consists of catch basins with 2-foot sumps, water quality basins, and subsurface infiltration systems with isolator rows to provide additional water quality treatment.

The computer program entitled *Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2023* by Autodesk, Inc. was used for designing the proposed storm drainage collection system. Storm drainage computations performed include pipe capacity and hydraulic grade line calculations. The contributing watershed to each individual catch basin inlet was delineated to determine the drainage area and land coverage. These values were used to determine the stormwater runoff to each inlet using the Rational Method. The rainfall intensities for the site were obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14,



Volume 10, Precipitation Frequency Data Server (PFDS). The proposed storm drainage system is designed to provide adequate capacity to convey the 25-year storm event.

Water Quality Management

Water quality measures or Best Management Practices (BMPs) have been incorporated into the design to maintain water quality to provide protection of the areas downgradient of the proposed development. The proposed stormwater management system will include catch basins with 2-foot sumps, subsurface infiltration systems with isolator rows for water quality treatment, water quality basins, and permeable pavers.

The subsurface chamber systems incorporate isolator rows that consist of a row of chambers where stormwater is further treated prior to entering the rest of the storage chamber system, thus enhancing sediment removal and protecting the storage chambers from sediment accumulation. These systems have been designed to meet criteria recommended by the *CTDEEP 2004 Stormwater Quality Manual*. The device was designed based on the determined WQF, which is the peak-flow rate associated with the WQV and sized based on the manufacturer's specifications. There are also three water quality basins proposed that will provide retention volume along their bottom, thus creating a water quality feature within it. This serves several purposes, including stormwater renovation and first-flush retention. The vegetation will provide pollutant removal by filtering stormwater runoff and utilizing excess nutrients that may be present in the stormwater. The *CTDEEP 2004 Stormwater Quality Manual* (Chapter 7) recommends methods for sizing stormwater treatment measures with WQV computations. The WQV addresses the initial stormwater runoff, also commonly referred to as the "first-flush" runoff. The WQV provides adequate volume to store the runoff associated with the first 1 inch of rainfall, which tends to contain the highest concentration of potential pollutants. Supporting calculations have been included in the Appendix of this report.

Hydrologic Analysis

A hydrologic analysis was conducted to analyze the predevelopment and postdevelopment peak-flow rates from the site. Four analysis points that receive runoff from the site were selected. Analysis Point 1 represents a majority of the site, including the parking and building areas and drains to the Norwalk River. Analysis Point 2 represents the front lawn area. Under proposed conditions, this area will be connected to the site stormwater system that eventually drains to the Norwalk River (AP-1). Analysis Point 3 represents the area of the site that drains towards Danbury Road. Analysis Point 4 represents the area of the site the drains to the existing landscaped area south of the entrance drive. Analysis Point 5 represents the area of the site draining to the catch basin located along the paved access road on the south side of the building. No part of the site will be draining to this location under proposed conditions. The total watershed area delineated is approximately 4.6 acres under both existing and proposed conditions.

The method of predicting the surface water runoff rates utilized in this analysis was a computer program titled *HydroCAD 10.20-3c* by HydroCAD Software Solutions LLC. The *HydroCAD* program is a computer model that utilizes the methodologies set forth in the *Technical Release No. 55* (TR-55) manual and *Technical Release No. 20* (TR-20) computer model, originally developed by the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS). The *HydroCAD* computer modeling program is primarily used for conducting hydrology studies such as this one.



The *HydroCAD* computer program forecasts the rate of surface water runoff based upon several factors. The input data includes information on land use, hydrologic soil type, vegetation, contributing watershed area, time of concentration, rainfall data, storage volumes, and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time, with the ability to include the attenuation effect due to dams, lakes, large wetlands, floodplains, and stormwater management basins. The input data for rainfalls with statistical recurrence frequencies of 2, 10, 25, 50, and 100 years was obtained from the NOAA Atlas 14, Volume 10 database. The corresponding rainfall totals are listed below.

Storm Frequency	Rainfall (inches)
2-year	3.53
10-year	5.39
25-year	6.56
50-year	7.42
100-year	8.35

Land use for the site under existing and proposed conditions was determined from field survey and aerial photogrammetry. Land use types used in the analysis included grassed or open space, building, and impervious (paved) cover. Soil types in the watershed were determined from the CTDEEP Geographic Information System (GIS) database of the USDA-NRCS soil survey for Fairfield County, Connecticut. For the analysis, the site was determined to contain hydrologic soil types “B/D,” “C,” and “D” as classified by USDA-NRCS. Composite runoff Curve Numbers (CN) for each subwatershed were calculated based on the different land use and soil types. The time of concentration (Tc) was estimated for each subwatershed using the TR-55 methodology and was computed by summing all travel times through the watershed as sheet flow, shallow concentrated flow, and channel flow.

The existing conditions were modeled with the *HydroCAD* program to determine the peak-flow rates for the various storm events at each analysis point. A revised model was developed incorporating the proposed site conditions, the underground chamber system, and the stormwater management basins. The flows obtained with the revised model were then compared to the results of the existing conditions model. Peak-flow rates from the project site were controlled by the storage volume provided within the underground infiltration system and the detention basins connected in series.

The following peak rates of runoff were obtained from the *HydroCAD* hydrology results:

Analysis Point 1 – Norwalk River					
	Peak Runoff Rate (cubic feet per second)				
Storm Frequency (years)	2	10	25	50	100
Existing Conditions	8.92	14.05	17.24	19.58	22.11
Proposed Conditions	2.79	6.46	7.59	8.36	9.23



Analysis Point 2* – Front Lawn					
	Peak Runoff Rate (cubic feet per second)				
Storm Frequency (years)	2	10	25	50	100
Existing Conditions	0.88	1.68	2.2	2.58	2.99
Proposed Conditions	0.11	0.23	0.75	1.38	2.15

*Note: The area draining to AP-2 subsequently drains to AP-1 under proposed conditions.

Analysis Point 3 – Danbury Road					
	Peak Runoff Rate (cubic feet per second)				
Storm Frequency (years)	2	10	25	50	100
Existing Conditions	0	0	0	0	0
Proposed Conditions	0.09	0.14	0.17	0.2	0.22

Analysis Point 4 – Landscape Island					
	Peak Runoff Rate (cubic feet per second)				
Storm Frequency (years)	2	10	25	50	100
Existing Conditions	0.08	0.15	0.20	0.23	0.27
Proposed Conditions	0.29	0.57	0.75	0.89	1.04

Analysis Point 5** – Access Drive Catch Basin (Existing Only)					
	Peak Runoff Rate (cubic feet per second)				
Storm Frequency (years)	2	10	25	50	100
Existing Conditions	1.52	2.54	3.18	3.64	4.14
Proposed Conditions	0	0	0	0	0

**Note: The existing structure at AP-5 was removed under proposed conditions.

Water Quality Basin 1 – North*					
	Water Surface Elevation (feet)				
Storm Frequency (years)	2	10	25	50	100
Proposed Conditions	139.6	139.9	139.9	140.0	140.0

*Top of Basin Elevation = 141.0



Water Quality Basin 2 – South**					
	Water Surface Elevation (feet)				
Storm Frequency (years)	2	10	25	50	100
Proposed Conditions	139.9	140.0	140.0	140.0	140.0

****Top of Basin Elevation = 141.0**

Water Quality Basin 3 – Front Lawn Meadow***					
	Water Surface Elevation (feet)				
Storm Frequency (years)	2	10	25	50	100
Proposed Conditions	148.5	149.0	149.1	149.2	149.3

*****Top of Basin Elevation = 150.0**

Subsurface Infiltration System 1*					
	Water Surface Elevation (feet)				
Storm Frequency (years)	2	10	25	50	100
Proposed Conditions	143.9	144.7	145.1	145.7	146.1

*** Inside Top of Chamber Elevation = 146.1**

Subsurface Infiltration System 2**					
	Water Surface Elevation (feet)				
Storm Frequency (years)	2	10	25	50	100
Proposed Conditions	144.2	144.2	144.2	144.2	144.2

**** Inside Top of Chamber Elevation = 144.5**

Subsurface Infiltration System 3***					
	Water Surface Elevation (feet)				
Storm Frequency (years)	2	10	25	50	100
Proposed Conditions	138.5	139.1	139.4	139.6	139.7

***** Inside Top of Chamber Elevation = 140.0**



Conclusion

The results of the hydrologic analysis demonstrate that there will be no increases in peak-flow rates from the proposed development. This was achieved for storm events modeled through a planned stormwater management system with subsurface infiltration systems and stormwater management basins. Manholes with internal weir wall structures at the outlets of the subsurface infiltration systems were designed to provide peak-flow attenuation and maximize water quality volume within the systems. The proposed development will also introduce a new stormwater treatment train consisting of catch basins with 2-foot sumps, isolator rows in the underground infiltration systems, water quality basins, and permeable pavers.

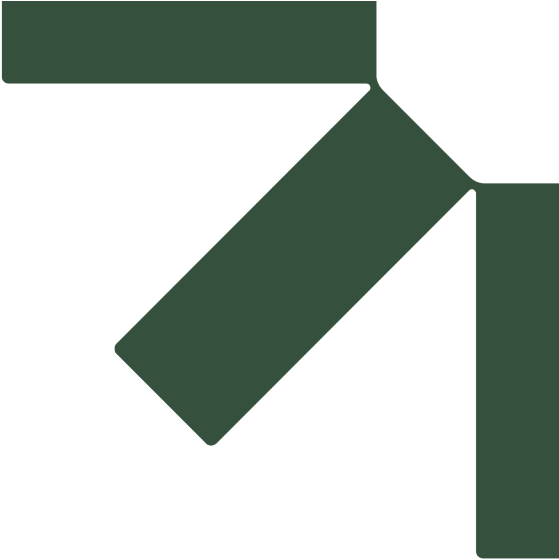
All supporting documentation and stormwater-related computations are attached to this report along with the *Hydrographs* model results for stormwater management and *Hydraflow Storm Sewers* model results for the proposed storm drainage system. Illustrative watershed maps for both existing and proposed conditions are also attached to this report.

Appendices

Appendix A	United States Geological Survey Location Map
Appendix B	Federal Emergency Management Agency Flood Insurance Rate Map
Appendix C	Natural Resources Conservation Service Hydrologic Soil Group Map
Appendix D	Storm Drainage Computations
Appendix E	Water Quality Computations
Appendix F	Hydrologic Analysis – Existing Conditions
Appendix G	Hydrologic Analysis – Proposed Conditions
Appendix H	Watershed Maps

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Appendix A United States Geological Survey Location Map

Proposed Multifamily Development

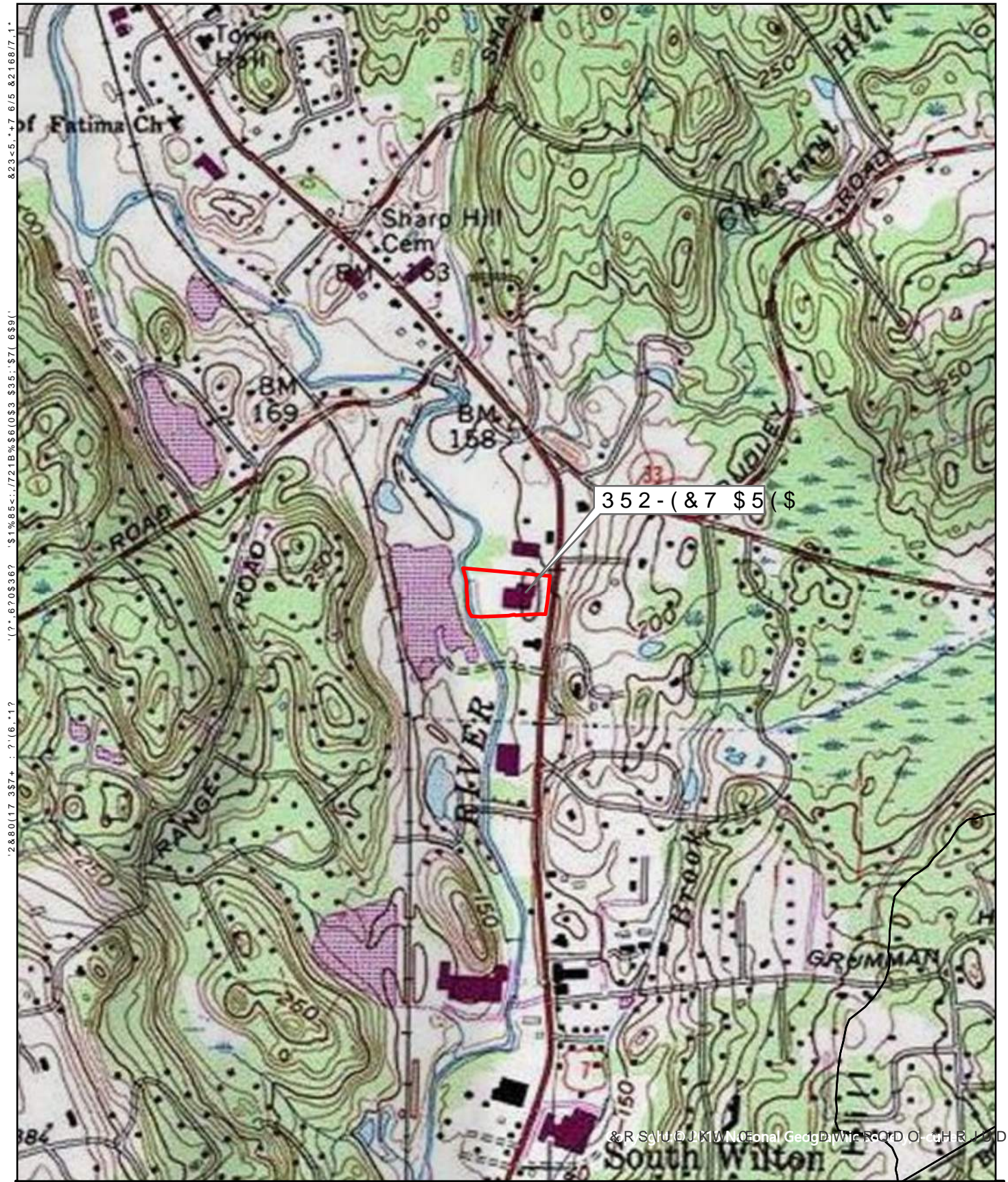
131 Danbury Road, Wilton, Connecticut
Drainage Report

Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023





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Appendix B

FEMA Flood Insurance Rate Map

Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

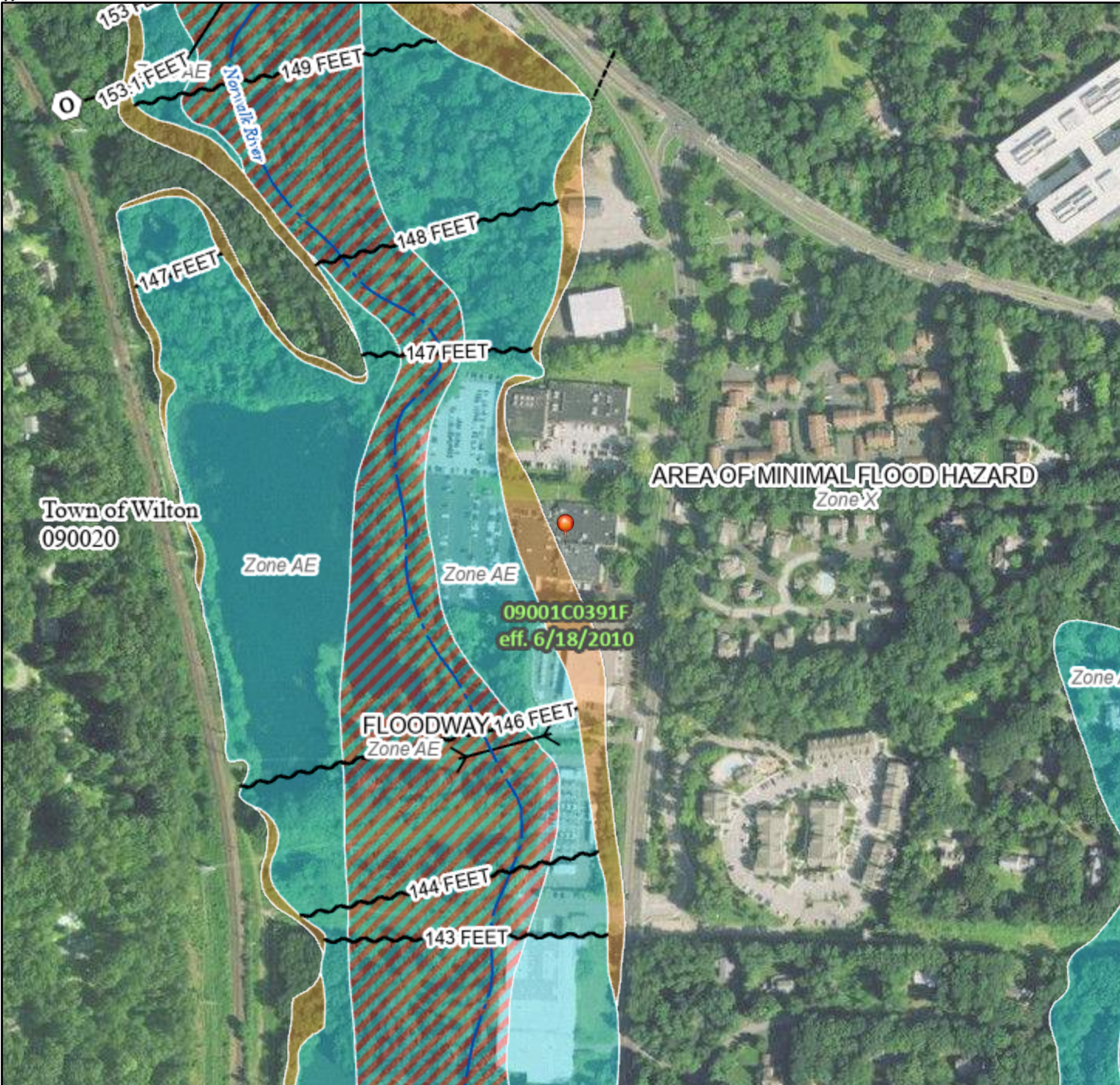
Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023



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Appendix C

Natural Resources Conservation Service Hydrologic Soil Group Map

Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

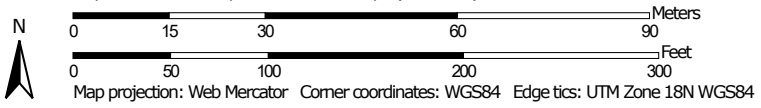
October 23, 2023



Figure 3: Soil Map—State of Connecticut




Map Scale: 1:1,180 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut

Survey Area Data: Version 22, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
103	Rippowam fine sandy loam	0.5	6.6%
305	Udorthents-Pits complex, gravelly	0.9	13.2%
307	Urban land	5.3	77.0%
W	Water	0.2	3.3%
Totals for Area of Interest		6.9	100.0%



Appendix D

Storm Drainage Computations

(*will be provided at a later date)

Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023





NOAA Atlas 14, Volume 10, Version 3
Location name: Wilton, Connecticut, USA*
Latitude: 41.1787°, Longitude: -73.4171°
Elevation: 147 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.38 (3.42-5.54)	5.10 (3.97-6.46)	6.28 (4.87-7.97)	7.25 (5.60-9.25)	8.59 (6.42-11.4)	9.61 (7.02-13.0)	10.7 (7.54-14.8)	11.8 (7.94-16.8)	13.3 (8.63-19.6)	14.5 (9.19-21.8)
10-min	3.10 (2.42-3.92)	3.61 (2.81-4.58)	4.45 (3.46-5.65)	5.14 (3.97-6.56)	6.08 (4.54-8.05)	6.81 (4.97-9.17)	7.55 (5.34-10.5)	8.34 (5.62-11.9)	9.43 (6.11-13.9)	10.3 (6.51-15.4)
15-min	2.43 (1.90-3.08)	2.83 (2.21-3.59)	3.48 (2.71-4.43)	4.03 (3.11-5.14)	4.77 (3.56-6.32)	5.34 (3.90-7.19)	5.92 (4.19-8.22)	6.54 (4.41-9.32)	7.39 (4.80-10.9)	8.07 (5.11-12.1)
30-min	1.70 (1.32-2.15)	1.97 (1.54-2.50)	2.42 (1.88-3.08)	2.80 (2.16-3.57)	3.31 (2.47-4.38)	3.71 (2.70-4.98)	4.11 (2.90-5.68)	4.52 (3.05-6.44)	5.07 (3.29-7.45)	5.49 (3.47-8.22)
60-min	1.09 (0.850-1.38)	1.26 (0.986-1.60)	1.55 (1.21-1.97)	1.79 (1.38-2.29)	2.12 (1.58-2.80)	2.38 (1.73-3.19)	2.63 (1.85-3.63)	2.88 (1.95-4.11)	3.22 (2.09-4.73)	3.47 (2.20-5.20)
2-hr	0.696 (0.547-0.876)	0.821 (0.644-1.03)	1.03 (0.802-1.30)	1.20 (0.929-1.52)	1.43 (1.07-1.88)	1.61 (1.18-2.15)	1.79 (1.27-2.48)	1.99 (1.35-2.82)	2.27 (1.48-3.31)	2.49 (1.58-3.71)
3-hr	0.532 (0.419-0.667)	0.633 (0.498-0.793)	0.796 (0.625-1.00)	0.932 (0.727-1.18)	1.12 (0.845-1.47)	1.26 (0.931-1.69)	1.41 (1.01-1.95)	1.57 (1.07-2.22)	1.81 (1.18-2.64)	2.00 (1.28-2.97)
6-hr	0.336 (0.266-0.418)	0.402 (0.318-0.501)	0.510 (0.403-0.637)	0.600 (0.471-0.753)	0.724 (0.549-0.946)	0.816 (0.607-1.09)	0.914 (0.660-1.26)	1.03 (0.699-1.44)	1.19 (0.779-1.72)	1.33 (0.848-1.96)
12-hr	0.206 (0.164-0.255)	0.248 (0.197-0.306)	0.315 (0.250-0.392)	0.372 (0.294-0.464)	0.450 (0.343-0.584)	0.508 (0.379-0.673)	0.569 (0.413-0.782)	0.641 (0.438-0.893)	0.746 (0.489-1.07)	0.834 (0.533-1.22)
24-hr	0.121 (0.097-0.148)	0.147 (0.118-0.180)	0.189 (0.151-0.233)	0.224 (0.178-0.278)	0.273 (0.210-0.353)	0.309 (0.232-0.408)	0.347 (0.254-0.476)	0.393 (0.269-0.545)	0.462 (0.303-0.659)	0.519 (0.333-0.755)
2-day	0.067 (0.054-0.081)	0.082 (0.066-0.101)	0.108 (0.087-0.133)	0.130 (0.104-0.160)	0.160 (0.124-0.206)	0.182 (0.138-0.239)	0.206 (0.152-0.281)	0.235 (0.161-0.323)	0.279 (0.184-0.396)	0.317 (0.204-0.458)
3-day	0.048 (0.039-0.058)	0.059 (0.048-0.072)	0.078 (0.063-0.096)	0.094 (0.075-0.115)	0.116 (0.090-0.149)	0.132 (0.100-0.173)	0.149 (0.111-0.204)	0.171 (0.118-0.234)	0.204 (0.134-0.288)	0.232 (0.149-0.334)
4-day	0.038 (0.031-0.046)	0.047 (0.038-0.057)	0.062 (0.050-0.076)	0.075 (0.060-0.092)	0.092 (0.072-0.118)	0.105 (0.080-0.137)	0.119 (0.088-0.162)	0.136 (0.093-0.185)	0.161 (0.107-0.228)	0.183 (0.118-0.263)
7-day	0.026 (0.021-0.031)	0.031 (0.026-0.038)	0.041 (0.033-0.050)	0.049 (0.039-0.059)	0.059 (0.046-0.076)	0.067 (0.051-0.087)	0.076 (0.056-0.102)	0.086 (0.060-0.117)	0.101 (0.067-0.142)	0.114 (0.074-0.163)
10-day	0.021 (0.017-0.025)	0.025 (0.020-0.030)	0.032 (0.026-0.039)	0.038 (0.030-0.046)	0.046 (0.036-0.058)	0.051 (0.039-0.066)	0.058 (0.043-0.077)	0.065 (0.045-0.088)	0.076 (0.050-0.106)	0.084 (0.055-0.120)
20-day	0.015 (0.012-0.017)	0.017 (0.014-0.020)	0.021 (0.017-0.025)	0.024 (0.019-0.029)	0.028 (0.022-0.036)	0.032 (0.024-0.040)	0.035 (0.026-0.046)	0.039 (0.027-0.052)	0.044 (0.029-0.061)	0.048 (0.031-0.068)
30-day	0.012 (0.010-0.014)	0.014 (0.011-0.016)	0.016 (0.013-0.020)	0.019 (0.015-0.023)	0.022 (0.017-0.027)	0.024 (0.019-0.031)	0.027 (0.020-0.035)	0.029 (0.020-0.039)	0.033 (0.022-0.045)	0.035 (0.023-0.050)
45-day	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.013 (0.011-0.016)	0.015 (0.012-0.018)	0.017 (0.013-0.021)	0.019 (0.014-0.024)	0.021 (0.015-0.027)	0.022 (0.016-0.030)	0.024 (0.016-0.034)	0.026 (0.017-0.037)
60-day	0.008 (0.007-0.010)	0.009 (0.008-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.015)	0.014 (0.011-0.018)	0.016 (0.012-0.020)	0.017 (0.012-0.022)	0.018 (0.013-0.024)	0.020 (0.013-0.028)	0.021 (0.014-0.030)

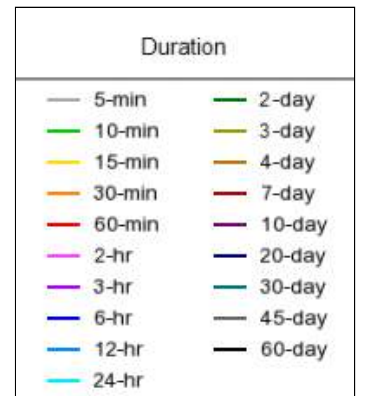
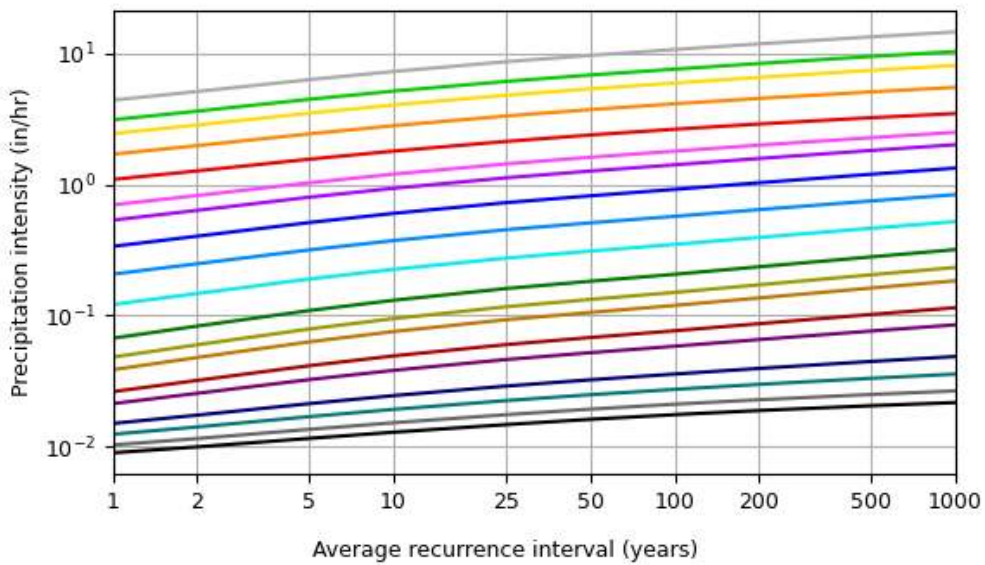
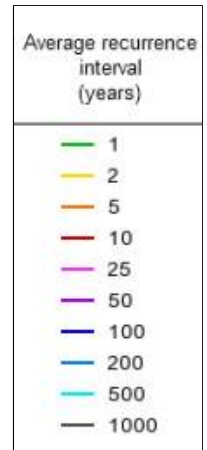
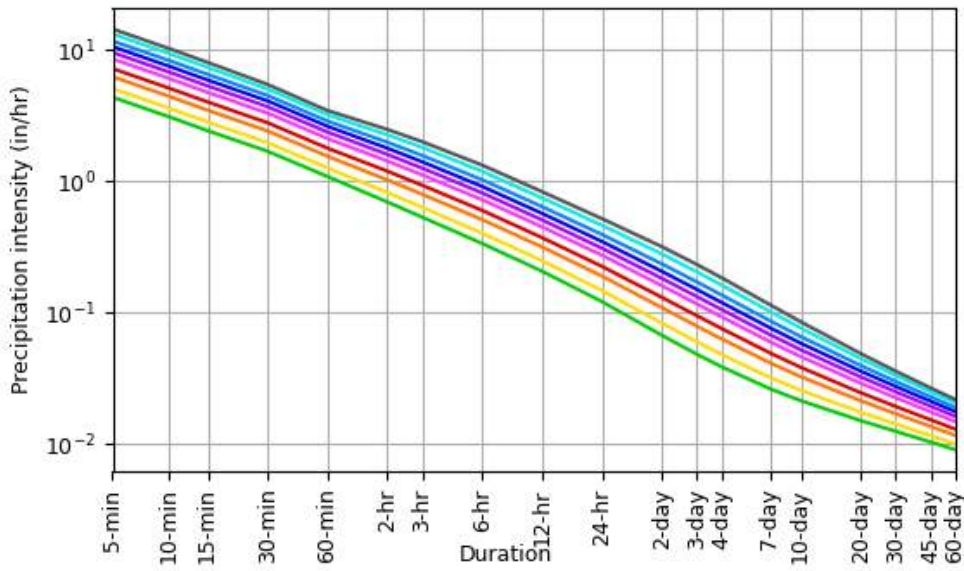
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based intensity-duration-frequency (IDF) curves

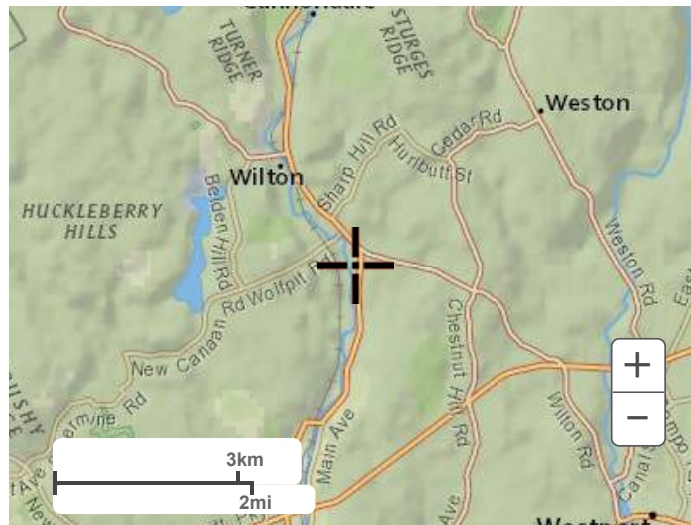
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Maps & aerials

Small scale terrain



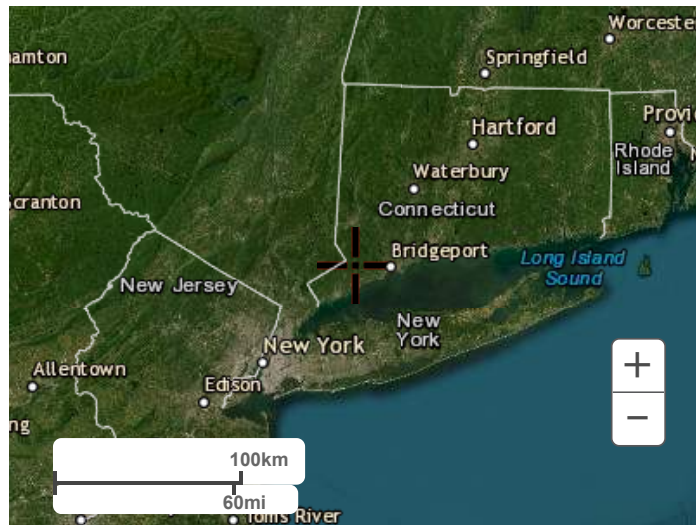
Large scale terrain



Large scale map



Large scale aerial

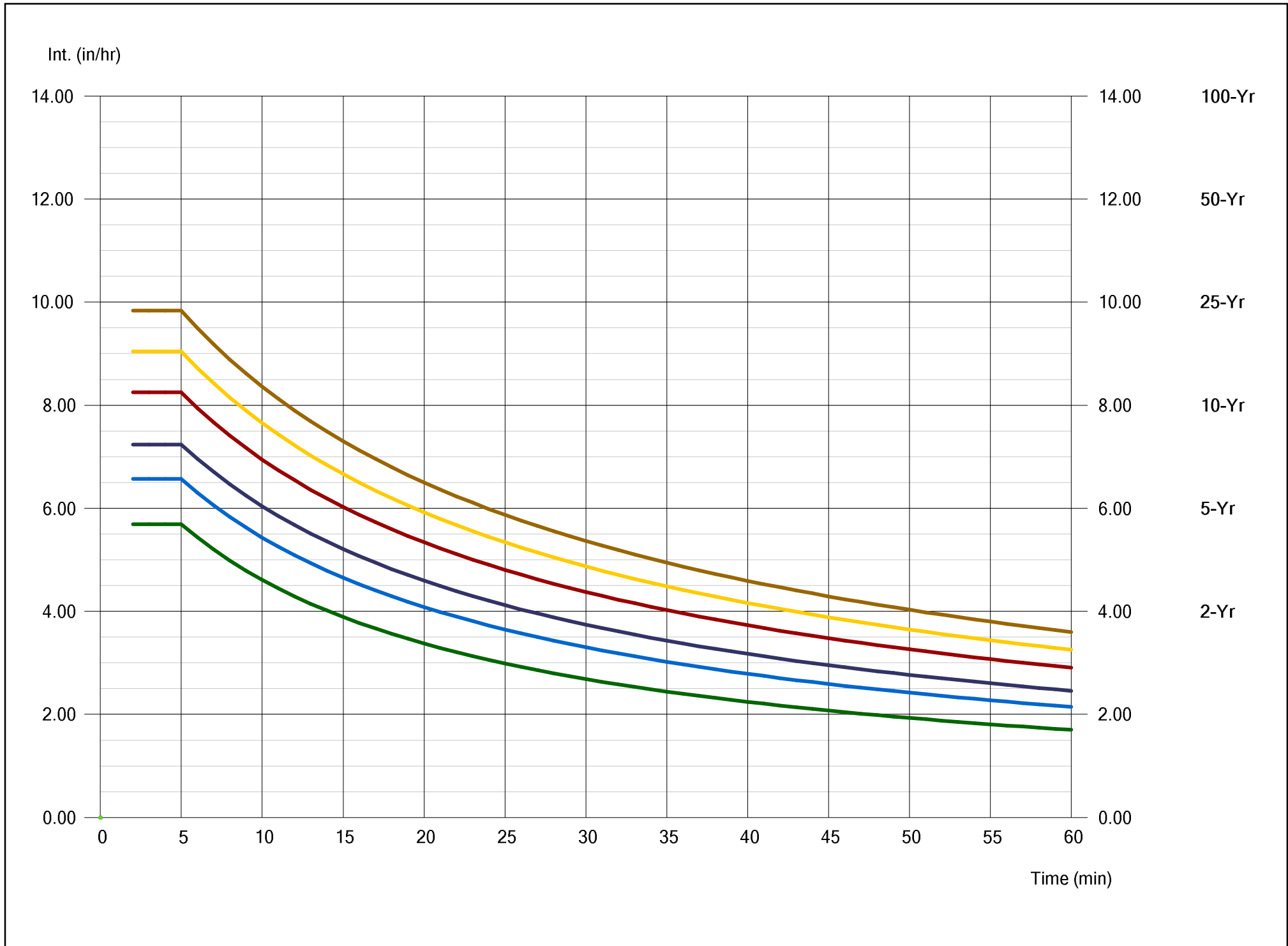


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Storm Sewer IDF Curves



Rational Method Individual Basin Calculations

Project: Proposed Multi-Family Development By: RH Date: 11/2/23
 Location: Wilton, Connecticut Checked: _____ Date: _____

Basin Name	Impervious Area C=0.9 (sf)	Grassed Area C=0.3 (sf)	Wooded Area C=0.2 (sf)	Total Area (sf)	Total Area (ac)	Weighted C	Tc (min)
System 1 UG							
CCB 17	1062	0	0	1062	0.02	0.90	5.0
CCB 18	1860	1144	0	3004	0.07	0.67	5.0
OVFL 19	1883	6304	0	8187	0.19	0.44	5.0
CLCB 20	1759	0	0	1759	0.04	0.90	5.0
CLCB 21	1740	0	0	1740	0.04	0.90	5.0
System 3 UG							
CCB 6	3375	63	0	3438	0.08	0.89	5.0
CCB 7	4855	323	0	5178	0.12	0.86	5.0
CCB 10	4743	4000	0	8743	0.20	0.63	5.0
CCB 14	2320	74	0	2394	0.05	0.88	5.0
OVFL 25	1069	5874	0	6943	0.16	0.39	5.0
CCB 26	3046	820	0	3866	0.09	0.77	5.0
CCB 26A	5350	1203	0	6553	0.15	0.79	5.0
CCB 27	5008	7986	0	12994	0.30	0.53	5.0
CCB 28	8279	281	0	8560	0.20	0.88	5.0
CCB 29	678	0	0	678	0.02	0.90	5.0
CCB 30	675	0	0	675	0.02	0.90	5.0
OVFL 3	1885	4002	0	5887	0.14	0.49	5.0

Rational Method Roof Drain System Calculations

Project: Proposed Multi-Family Development
 Location: Wilton, Connecticut

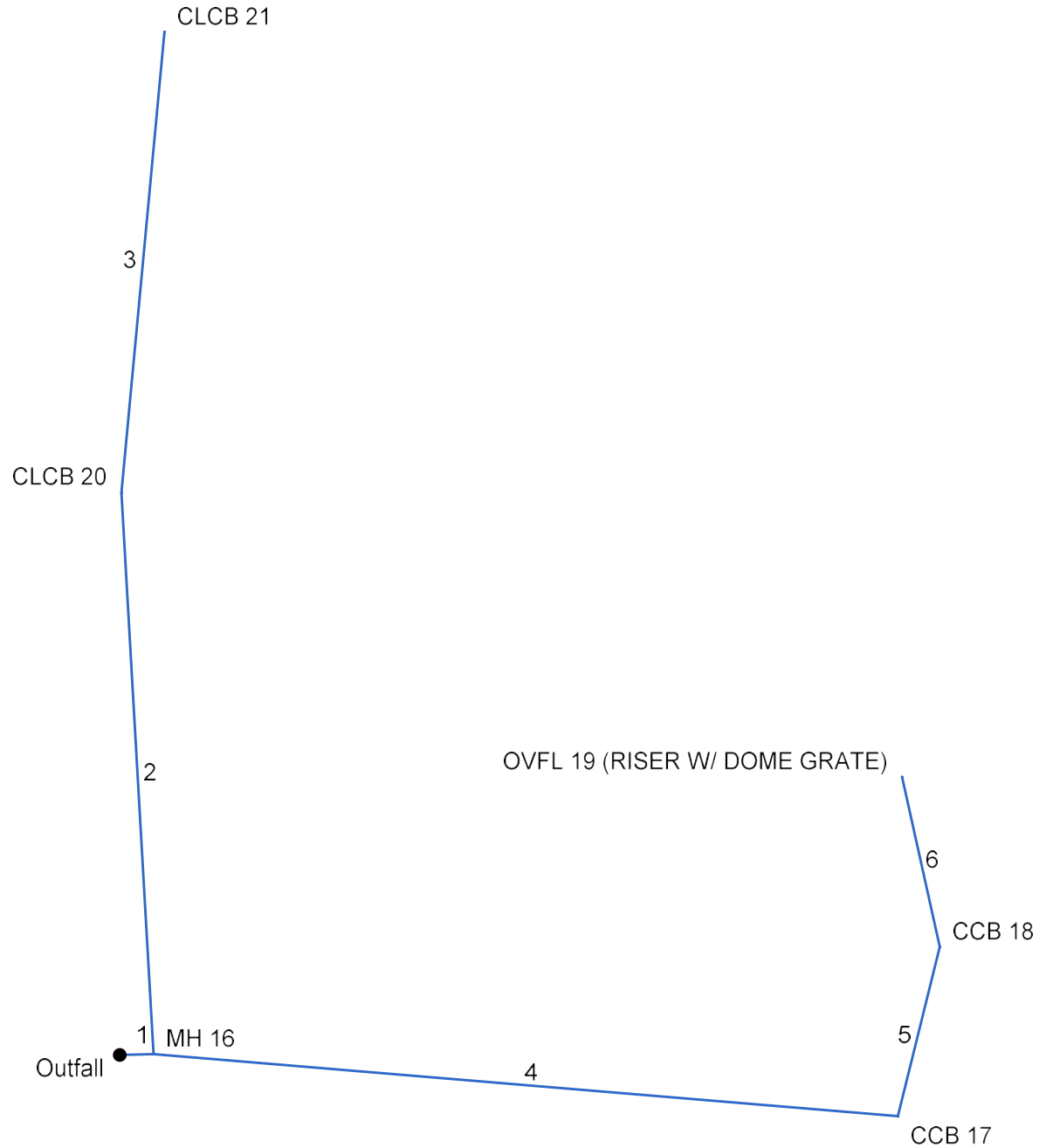
By: RH
 Checked: _____

Date: 10/16/23
 Date: _____

Total Roof Runoff to Proposed Storm Drainage System (In Hydraflow Model)

	ROOF TO UG SYSTEM 2	ROOF TO CLCB 21				
C	0.90	0.90				
I	8.59	8.59				
A	0.10	0.07				
Q	0.77	0.57				

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: System 1.stm

Number of lines: 6

Date: 10/19/2023

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data							Line ID	
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)		Inlet/ Rim El (ft)
1	End	5.000	-1.474	MH	0.00	0.00	0.00	0.0	143.70	0.00	143.70	24	Cir	0.012	1.00	151.20	UG S-1 - MH 16
2	1	84.000	-91.766	Grate	0.00	0.04	0.19	5.0	147.00	2.26	148.90	15	Cir	0.012	0.50	152.40	MH 16 - CLCB 20
3	2	69.000	8.540	Grate	0.57	0.04	0.90	5.0	148.90	2.90	150.90	15	Cir	0.012	1.00	152.40	CLCB 20 - CLCB 21
4	1	111.000	6.245	Comb	0.00	0.02	0.90	5.0	143.80	1.08	145.00	15	Cir	0.012	1.48	149.90	MH 16 - CCB 17
5	4	26.000	-80.809	Comb	0.00	0.07	0.67	5.0	145.00	1.15	145.30	15	Cir	0.012	0.75	152.17	CCB 17 - CCB 18
6	5	26.000	-26.489	DrGrt	0.75	0.19	0.44	5.0	145.30	0.77	145.50	12	Cir	0.012	1.00	149.00	CCB 18 - OVFL 19

Project File: System 1.stm

Number of lines: 6

Date: 10/19/2023

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	5.000	0.00	0.36	0.00	0.00	0.19	0.0	6.2	7.9	2.83	0.00	0.90	24	0.00	143.70	143.70	145.70	145.70	0.00	151.20	UG S-1 - MH 16
2	1	84.000	0.04	0.08	0.19	0.01	0.04	5.0	5.4	8.1	0.92	10.52	4.12	15	2.26	147.00	148.90	147.25	149.28	151.20	152.40	MH 16 - CLCB 20
3	2	69.000	0.04	0.04	0.90	0.04	0.04	5.0	5.0	8.2	0.87	11.91	2.84	15	2.90	148.90	150.90	149.28	151.26	152.40	152.40	CLCB 20 - CLCB
4	1	111.000	0.02	0.28	0.90	0.02	0.15	5.0	5.3	8.2	1.96	7.27	2.00	15	1.08	143.80	145.00	145.71	145.79	151.20	149.90	MH 16 - CCB 17
5	4	26.000	0.07	0.26	0.67	0.05	0.13	5.0	5.1	8.2	1.82	7.51	2.75	15	1.15	145.00	145.30	145.92	145.84	149.90	152.17	CCB 17 - CCB 18
6	5	26.000	0.19	0.19	0.44	0.08	0.08	5.0	5.0	8.2	1.44	3.38	3.48	12	0.77	145.30	145.50	145.84	146.01	152.17	149.00	CCB 18 - OVFL 1

Project File: System 1.stm

Number of lines: 6

Run Date: 10/19/2023

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = Yrs. 25 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	2.83	143.70	145.70	2.00	3.14	0.90	0.01	145.71	0.013	5.000	143.70	145.70	2.00	3.14	0.90	0.01	145.71	0.013	0.013	0.001	1.00	0.01
2	15	0.92	147.00	147.25	0.25*	0.18	5.27	0.14	147.39	0.000	84.000	148.90	149.28	0.38**	0.31	2.96	0.14	149.41	0.000	0.000	n/a	0.50	n/a
3	15	0.87	148.90	149.28	0.38	0.30	2.78	0.13	149.41	0.000	69.000	150.90	151.26 j	0.36**	0.30	2.91	0.13	151.40	0.000	0.000	n/a	1.00	n/a
4	15	1.96	143.80	145.71	1.25	1.23	1.60	0.04	145.75	0.079	111.000	145.00	145.79	0.79	0.82	2.40	0.09	145.88	0.149	0.114	0.127	1.48	0.13
5	15	1.82	145.00	145.92	0.92	0.50	1.88	0.20	146.13	0.000	26.000	145.30	145.84	0.54**	0.50	3.62	0.20	146.04	0.000	0.000	n/a	0.75	n/a
6	12	1.44	145.30	145.84	0.54	0.40	3.36	0.20	146.04	0.000	26.000	145.50	146.01 j	0.51**	0.40	3.60	0.20	146.21	0.000	0.000	n/a	1.00	n/a

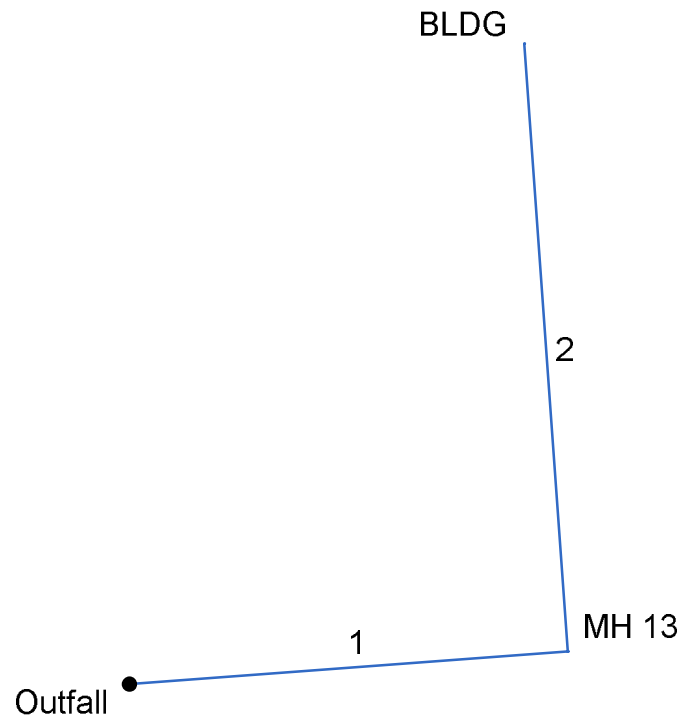
Project File: System 1.stm

Number of lines: 6

Run Date: 10/19/2023

Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	5.000	-4.471	MH	0.00	0.00	0.00	0.0	142.10	0.00	142.10	24	Cir	0.012	1.00	145.96	UG S-2 - MH 13
2	1	7.000	-89.517	None	1.40	0.00	0.00	0.0	143.10	1.43	143.20	12	Cir	0.012	1.00	0.00	MH 13 - BLDG

Project File: System 2.stm

Number of lines: 2

Date: 11/3/2023

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	5.000	0.00	0.00	0.00	0.00	0.00	0.0	0.1	0.0	1.40	0.00	0.45	24	0.00	142.10	142.10	144.10	144.10	0.00	145.96	UG S-2 - MH 13
2	1	7.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.40	4.61	1.83	12	1.43	143.10	143.20	144.10	144.11	145.96	0.00	MH 13 - BLDG

Project File: System 2.stm

Number of lines: 2

Run Date: 11/3/2023

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = Yrs. 25 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	1.40	142.10	144.10	2.00	3.14	0.45	0.00	144.10	0.003	5.000	142.10	144.10	2.00	3.14	0.45	0.00	144.10	0.003	0.003	0.000	1.00	0.00
2	12	1.40	143.10	144.10	1.00	0.79	1.78	0.05	144.15	0.132	7.000	143.20	144.11	0.91	0.75	1.87	0.05	144.16	0.115	0.123	0.009	1.00	0.05

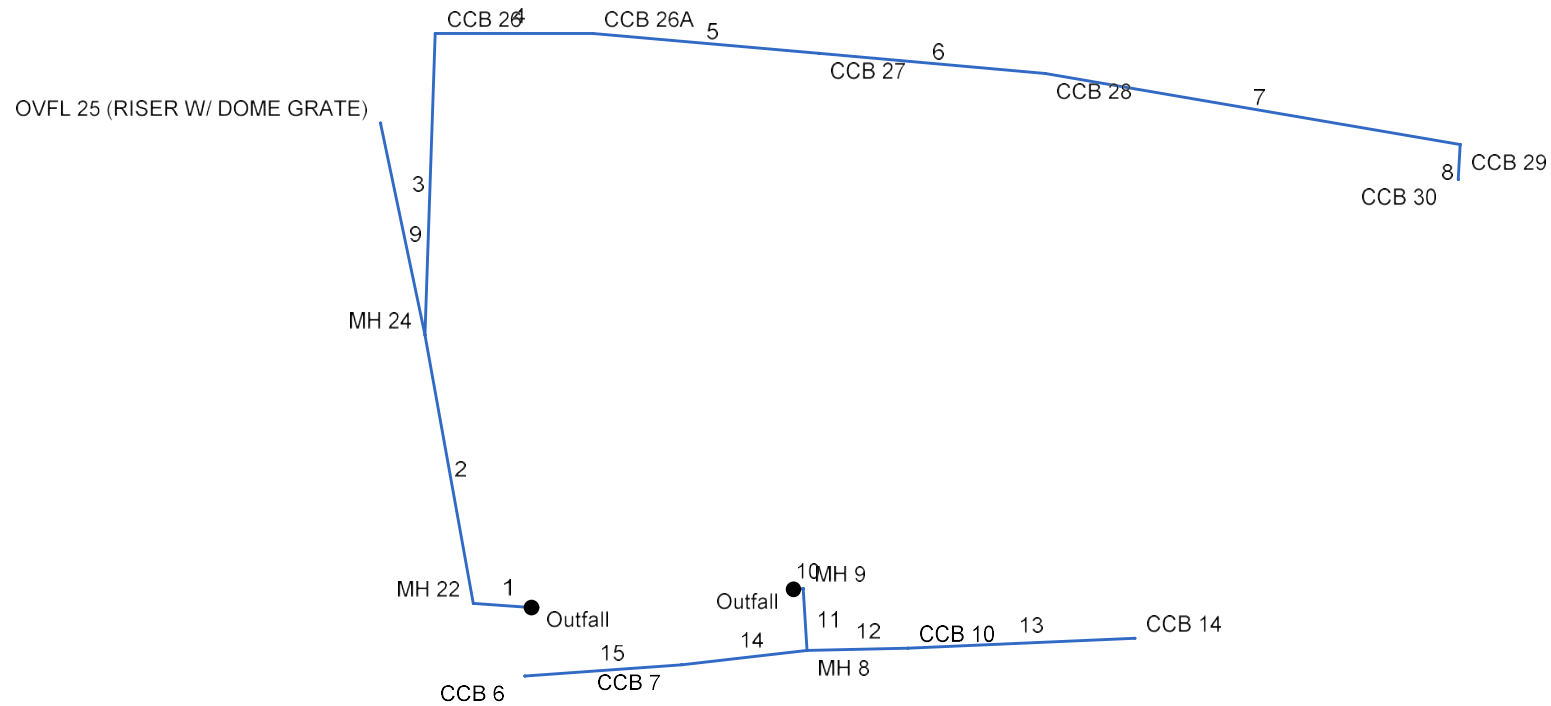
Project File: System 2.stm

Number of lines: 2

Run Date: 11/3/2023

; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	30.000	-175.857	MH	0.00	0.00	0.00	0.0	137.60	0.33	137.70	24	Cir	0.012	0.97	143.10	UG 3 - MH 22
2	1	141.000	75.668	MH	0.00	0.00	0.00	0.0	137.70	0.50	138.40	15	Cir	0.012	0.25	142.43	MH 22 - MH 24
3	2	156.000	12.129	Comb	0.00	0.09	0.77	5.0	138.40	0.51	139.20	15	Cir	0.012	1.50	143.13	MH 24 - CCB 26
4	3	81.000	88.013	Comb	0.00	0.15	0.79	5.0	139.20	1.36	140.30	12	Cir	0.012	0.50	143.80	CCB 26 - CCB 26A
5	4	117.000	5.104	Comb	0.00	0.30	0.53	5.0	140.30	3.16	144.00	12	Cir	0.012	0.50	147.50	CCB 26A - CCB 27
6	5	117.000	0.009	Comb	0.00	0.20	0.88	5.0	144.00	1.45	145.70	12	Cir	0.012	0.50	151.20	CCB 27- CCB 28
7	6	217.000	4.715	Comb	0.00	0.02	0.90	5.0	145.70	0.88	147.60	12	Cir	0.012	1.49	150.90	CCB 28 - CCB 29
8	7	18.000	83.418	Comb	0.00	0.02	0.90	5.0	147.60	0.56	147.70	12	Cir	0.012	1.00	150.90	CCB 29 - CCB 30
9	2	112.000	-1.613	DrGrt	0.70	0.00	0.00	5.0	138.40	0.54	139.00	8	Cir	0.012	1.00	139.80	MH 24 - OVFL 25
10	End	5.000	-3.988	MH	0.00	0.00	0.00	0.0	137.60	0.00	137.60	24	Cir	0.012	1.00	146.30	UG 3 - MH 9
11	10	32.000	90.535	MH	0.00	0.00	0.00	0.0	137.70	0.94	138.00	15	Cir	0.012	1.00	146.10	MH 9 - MH 8
12	11	52.000	-87.770	Comb	0.00	0.20	0.63	5.0	138.00	0.38	138.20	15	Cir	0.012	0.50	147.10	MH 8 - CCB 10
13	12	117.000	-1.346	Comb	0.00	0.05	0.88	5.0	142.80	2.74	146.00	15	Cir	0.012	1.00	150.90	CCB 10 - CCB 14
14	11	65.000	86.948	Comb	0.00	0.12	0.86	5.0	138.00	1.23	138.80	12	Cir	0.012	0.50	144.80	MH 8 - CCB 7
15	14	81.000	2.334	Comb	0.00	0.08	0.89	5.0	138.80	0.99	139.60	12	Cir	0.012	1.00	143.16	CCB 7 - CCB 6

Project File: System 3-01.stm

Number of lines: 15

Date: 11/3/2023

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	30.000	0.00	0.78	0.00	0.00	0.56	0.0	10.5	6.8	4.52	14.15	1.45	24	0.33	137.60	137.70	139.60	139.61	0.00	143.10	UG 3 - MH 22
2	1	141.000	0.00	0.78	0.00	0.00	0.56	0.0	9.8	7.0	4.60	4.93	3.75	15	0.50	137.70	138.40	139.64	140.25	143.10	142.43	MH 22 - MH 24
3	2	156.000	0.09	0.78	0.77	0.07	0.56	5.0	9.1	7.2	4.00	5.01	3.26	15	0.51	138.40	139.20	140.30	140.81	142.43	143.13	MH 24 - CCB 26
4	3	81.000	0.15	0.69	0.79	0.12	0.49	5.0	8.8	7.2	3.54	4.50	4.50	12	1.36	139.20	140.30	141.06	141.74	143.13	143.80	CCB 26 - CCB 26
5	4	117.000	0.30	0.54	0.53	0.16	0.37	5.0	8.3	7.3	2.72	6.86	4.03	12	3.16	140.30	144.00	141.90	144.71	143.80	147.50	CCB 26A - CCB 2
6	5	117.000	0.20	0.24	0.88	0.18	0.21	5.0	7.7	7.5	1.59	4.65	3.20	12	1.45	144.00	145.70	144.71	146.23	147.50	151.20	CCB 27 - CCB 28
7	6	217.000	0.02	0.04	0.90	0.02	0.04	5.0	5.2	8.2	0.29	3.61	1.47	12	0.88	145.70	147.60	146.23	147.82	151.20	150.90	CCB 28 - CCB 29
8	7	18.000	0.02	0.02	0.90	0.02	0.02	5.0	5.0	8.2	0.15	2.88	1.50	12	0.56	147.60	147.70	147.82	147.86	150.90	150.90	CCB 29 - CCB 30
9	2	112.000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.70	0.96	2.01	8	0.54	138.40	139.00	140.30	140.63	142.43	139.80	MH 24 - OVFL 25
10	End	5.000	0.00	0.45	0.00	0.00	0.34	0.0	6.6	7.8	2.67	0.00	0.85	24	0.00	137.60	137.60	139.60	139.60	0.00	146.30	UG 3 - MH 9
11	10	32.000	0.00	0.45	0.00	0.00	0.34	0.0	6.4	7.8	2.70	6.77	2.20	15	0.94	137.70	138.00	139.61	139.66	146.30	146.10	MH 9 - MH 8
12	11	52.000	0.20	0.25	0.63	0.13	0.17	5.0	5.6	8.1	1.37	4.34	1.12	15	0.38	138.00	138.20	139.73	139.75	146.10	147.10	MH 8 - CCB 10
13	12	117.000	0.05	0.05	0.88	0.04	0.04	5.0	5.0	8.2	0.36	11.57	3.28	15	2.74	142.80	146.00	142.95	146.23	147.10	150.90	CCB 10 - CCB 14
14	11	65.000	0.12	0.20	0.86	0.10	0.17	5.0	5.8	8.0	1.40	4.28	1.78	12	1.23	138.00	138.80	139.73	139.80	146.10	144.80	MH 8 - CCB 7
15	14	81.000	0.08	0.08	0.89	0.07	0.07	5.0	5.0	8.2	0.59	3.83	1.72	12	0.99	138.80	139.60	139.82	139.92	144.80	143.16	CCB 7 - CCB 6

Project File: System 3-01.stm

Number of lines: 15

Run Date: 11/3/2023

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = Yrs. 25 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	4.52	137.60	139.60	2.00	3.14	1.44	0.03	139.63	0.034	30.000	137.70	139.61	1.91	3.09	1.46	0.03	139.64	0.030	0.032	0.010	0.97	0.03
2	15	4.60	137.70	139.64	1.25	1.23	3.75	0.22	139.86	0.432	141.000	138.40	140.25	1.25	1.23	3.75	0.22	140.47	0.432	0.432	0.610	0.25	0.05
3	15	4.00	138.40	140.30	1.25	1.23	3.26	0.17	140.47	0.327	156.000	139.20	140.81	1.25	1.23	3.26	0.17	140.98	0.327	0.327	0.510	1.50	0.25
4	12	3.54	139.20	141.06	1.00	0.79	4.50	0.32	141.38	0.841	81.000	140.30	141.74	1.00	0.79	4.50	0.32	142.06	0.841	0.841	0.681	0.50	0.16
5	12	2.72	140.30	141.90	1.00	0.59	3.47	0.19	142.09	0.499	117.000	144.00	144.71 j	0.71**	0.59	4.59	0.33	145.03	0.693	0.596	n/a	0.50	n/a
6	12	1.59	144.00	144.71	0.71	0.43	2.68	0.21	144.92	0.000	117.000	145.70	146.23 j	0.53**	0.43	3.72	0.21	146.45	0.000	0.000	n/a	0.50	0.11
7	12	0.29	145.70	146.23	0.53	0.13	0.69	0.08	146.31	0.000	217.000	147.60	147.82 j	0.22**	0.13	2.25	0.08	147.90	0.000	0.000	n/a	1.49	0.12
8	12	0.15	147.60	147.82	0.22	0.08	1.13	0.05	147.88	0.000	18.000	147.70	147.86	0.16**	0.08	1.87	0.05	147.91	0.000	0.000	n/a	1.00	0.05
9	8	0.70	138.40	140.30	0.67	0.35	2.01	0.06	140.37	0.286	112.000	139.00	140.63	0.67	0.35	2.01	0.06	140.69	0.286	0.286	0.321	1.00	0.06
10	24	2.67	137.60	139.60	2.00*	3.14	0.85	0.01	139.61	0.012	5.000	137.60	139.60	2.00	3.14	0.85	0.01	139.61	0.012	0.012	0.001	1.00	0.01
11	15	2.70	137.70	139.61	1.25	1.23	2.20	0.08	139.69	0.149	32.000	138.00	139.66	1.25	1.23	2.20	0.08	139.73	0.149	0.149	0.048	1.00	0.08
12	15	1.37	138.00	139.73	1.25	1.23	1.12	0.02	139.75	0.038	52.000	138.20	139.75	1.25	1.23	1.12	0.02	139.77	0.038	0.038	0.020	0.50	0.01
13	15	0.36	142.80	142.95	0.15*	0.09	4.27	0.08	143.03	0.000	117.000	146.00	146.23	0.23**	0.16	2.29	0.08	146.32	0.000	0.000	n/a	1.00	n/a
14	12	1.40	138.00	139.73	1.00	0.79	1.78	0.05	139.78	0.131	65.000	138.80	139.80	1.00	0.79	1.78	0.05	139.85	0.129	0.130	0.084	0.50	0.02
15	12	0.59	138.80	139.82	1.00	0.22	0.75	0.01	139.83	0.023	81.000	139.60	139.92 j	0.32**	0.22	2.70	0.11	140.03	0.467	0.245	0.199	1.00	0.11

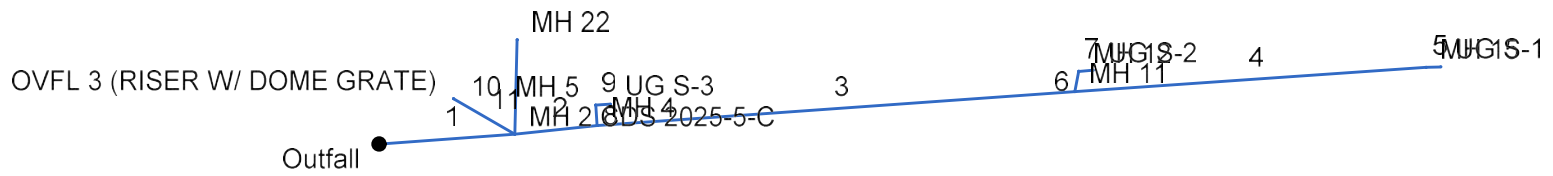
Project File: System 3-01.stm

Number of lines: 15

Run Date: 11/3/2023

Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	46.000	-4.075	MH	0.00	0.00	0.00	0.0	137.30	0.65	137.60	24	Cir	0.012	1.00	143.71	HD 1 - MH 2
2	1	28.000	-1.955	MH	0.00	0.00	0.00	0.0	137.60	1.43	138.00	18	Cir	0.012	1.00	143.30	MH 2 - MH 4
3	2	162.000	1.961	MH	0.00	0.00	0.00	0.0	139.80	1.85	142.80	12	Cir	0.012	0.98	146.40	MH 4 - MH 11
4	3	119.000	0.080	MH	0.00	0.00	0.00	0.0	142.90	1.26	144.40	15	Cir	0.012	0.15	149.60	MH 11 - MH 15
5	4	5.000	2.399	None	1.92	0.00	0.00	0.0	144.40	0.00	144.40	15	Cir	0.012	1.00	146.10	MH 15 - UG S-1
6	3	7.000	-75.948	MH	0.00	0.00	0.00	0.0	142.90	1.43	143.00	12	Cir	0.012	0.98	146.50	MH 11 - MH 12
7	6	5.000	76.028	None	1.31	0.00	0.00	0.0	143.00	0.00	143.00	12	Cir	0.012	1.00	144.50	MH 12 - UG S-2
8	2	7.000	-88.084	MH	0.00	0.00	0.00	0.0	137.80	1.43	137.90	18	Cir	0.012	1.00	140.33	MH 4 - MH 5
9	8	5.000	90.125	None	6.04	0.00	0.00	0.0	137.90	0.00	137.90	18	Cir	0.012	1.00	140.00	MH 5 - UG S-3
10	1	32.000	-84.465	MH	2.94	0.00	0.00	0.0	137.60	5.94	139.50	15	Cir	0.012	1.00	143.10	MH 2 - MH 22
11	1	24.000	-145.675	DrGrt	0.85	0.00	0.00	0.0	137.80	0.83	138.00	8	Cir	0.012	1.00	141.00	MH 2 - OVFL 3

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	46.000	0.00	0.00	0.00	0.00	0.00	0.0	1.2	0.0	13.06	19.79	5.61	24	0.65	137.30	137.60	138.80	138.90	139.43	143.71	HD 1 - MH 2
2	1	28.000	0.00	0.00	0.00	0.00	0.00	0.0	1.1	0.0	9.27	13.60	5.97	18	1.43	137.60	138.00	138.90	139.18	143.71	143.30	MH 2 - MH 4
3	2	162.000	0.00	0.00	0.00	0.00	0.00	0.0	0.6	0.0	3.23	5.25	6.01	12	1.85	139.80	142.80	140.37	143.57	143.30	146.40	MH 4 - MH 11
4	3	119.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.92	7.85	3.28	15	1.26	142.90	144.40	143.57	144.95	146.40	149.60	MH 11 - MH 15
5	4	5.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.92	0.00	3.37	15	0.00	144.40	144.40	144.95	145.04	149.60	146.10	MH 15 - UG S-1
6	3	7.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.31	4.61	2.92	12	1.43	142.90	143.00	143.57	143.48	146.40	146.50	MH 11 - MH 12
7	6	5.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.31	0.00	3.17	12	0.00	143.00	143.00	143.48	143.57	146.50	144.50	MH 12 - UG S-2
8	2	7.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	6.04	13.60	4.34	18	1.43	137.80	137.90	139.18	138.85	143.30	140.33	MH 4 - MH 5
9	8	5.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	6.04	0.00	4.82	18	0.00	137.90	137.90	138.85	138.96	140.33	140.00	MH 5 - UG S-3
10	1	32.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.94	17.05	3.32	15	5.94	137.60	139.50	138.90	140.19	143.71	143.10	MH 2 - MH 22
11	1	24.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.85	1.19	2.44	8	0.83	137.80	138.00	138.90	139.00	143.71	141.00	MH 2 - OVFL 3

Project File: Outlet System 1 2 and 3 - 01.stm

Number of lines: 11

Run Date: 11/3/2023

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = Yrs. 100 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	24	13.06	137.30	138.80	1.50	2.16	5.17	0.57	139.37	0.000	46.000	137.60	138.90 j	1.30**	2.16	6.05	0.57	139.47	0.000	0.000	n/a	1.00	n/a
2	18	9.27	137.60	138.90	1.30	1.49	5.70	0.60	139.50	0.000	28.000	138.00	139.18 j	1.18**	1.49	6.24	0.60	139.78	0.000	0.000	n/a	1.00	0.60
3	12	3.23	139.80	140.37	0.57*	0.46	7.03	0.39	140.75	0.000	162.000	142.80	143.57	0.77**	0.65	4.98	0.39	143.96	0.000	0.000	n/a	0.98	n/a
4	15	1.92	142.90	143.57	0.67	0.52	2.87	0.21	143.78	0.000	119.000	144.40	144.95 j	0.55**	0.52	3.68	0.21	145.16	0.000	0.000	n/a	0.15	0.03
5	15	1.92	144.40	144.95	0.55*	0.52	3.68	0.21	145.16	0.467	5.000	144.40	145.04	0.64	0.63	3.07	0.15	145.18	0.285	0.376	0.019	1.00	0.15
6	12	1.31	142.90	143.57	0.67	0.38	2.35	0.19	143.76	0.000	7.000	143.00	143.48	0.48**	0.38	3.49	0.19	143.67	0.000	0.000	n/a	0.98	n/a
7	12	1.31	143.00	143.48	0.48*	0.38	3.49	0.19	143.67	0.519	5.000	143.00	143.57	0.57	0.46	2.86	0.13	143.69	0.308	0.413	0.021	1.00	0.13
8	18	6.04	137.80	139.18	1.38	1.18	3.56	0.41	139.59	0.000	7.000	137.90	138.85	0.95**	1.18	5.13	0.41	139.26	0.000	0.000	n/a	1.00	0.41
9	18	6.04	137.90	138.85	0.95*	1.18	5.13	0.41	139.26	0.534	5.000	137.90	138.96	1.06	1.34	4.50	0.32	139.28	0.388	0.461	0.023	1.00	0.32
10	15	2.94	137.60	138.90	1.25	0.69	2.40	0.09	138.99	0.177	32.000	139.50	140.19 j	0.69**	0.69	4.24	0.28	140.47	0.512	0.344	n/a	1.00	0.28
11	8	0.85	137.80	138.90	0.67	0.35	2.44	0.09	138.99	0.422	24.000	138.00	139.00	0.67	0.35	2.44	0.09	139.09	0.422	0.422	0.101	1.00	0.09

Project File: Outlet System 1 2 and 3 - 01.stm

Number of lines: 11

Run Date: 11/3/2023

Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Outlet Protection Calculations

Project: Proposed Multi-Family Development
Location: Wilton, Connecticut
Outlet I.D.: **HEADWALL 1 TO RIVER**

By: RH Date: 11/02/23
Checked: Date:

*Based on Connecticut DOT Drainage Manual, Section 11.13

Description:

CONCRETE HEADWALL 1 TO RIVER

Design Criteria (100-yr Storm Event):

Q (cfs) = 13.1 R_p (ft)= 2
D (in) = 24 S_p (ft) = 2
V (fps) = 5.61 T_w (ft)= 0.3

Q= Flow rate at discharge point in cubic feet per second (cfs)

D= Outlet pipe diameter (in)

V= Flow velocity at discharge point (ft/s)

R_p = Maximum inside pipe rise (ft)

S_p = inside diameters for circular sections of maximum inside pipe span for non-circular sections (ft)

T_w = Tailwater depth (ft)

Based on Table 11-12.1 use Type 'A' ----> $TW < 0.5 R_p$

Rip Rap Stone Size:

<u>Velocity</u>	<u>Rip Rap Specification</u>	<u>D_{50} Stone Size</u>
0-8 fps	Modified	5 inches

Preformed Scour Hole Dimensions:

F (ft)= $0.5(R_p)$ = n/a


C (ft)= $3.0(S_p)+6.0(F)$ = n/a

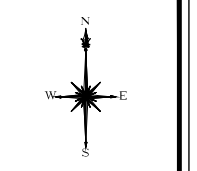
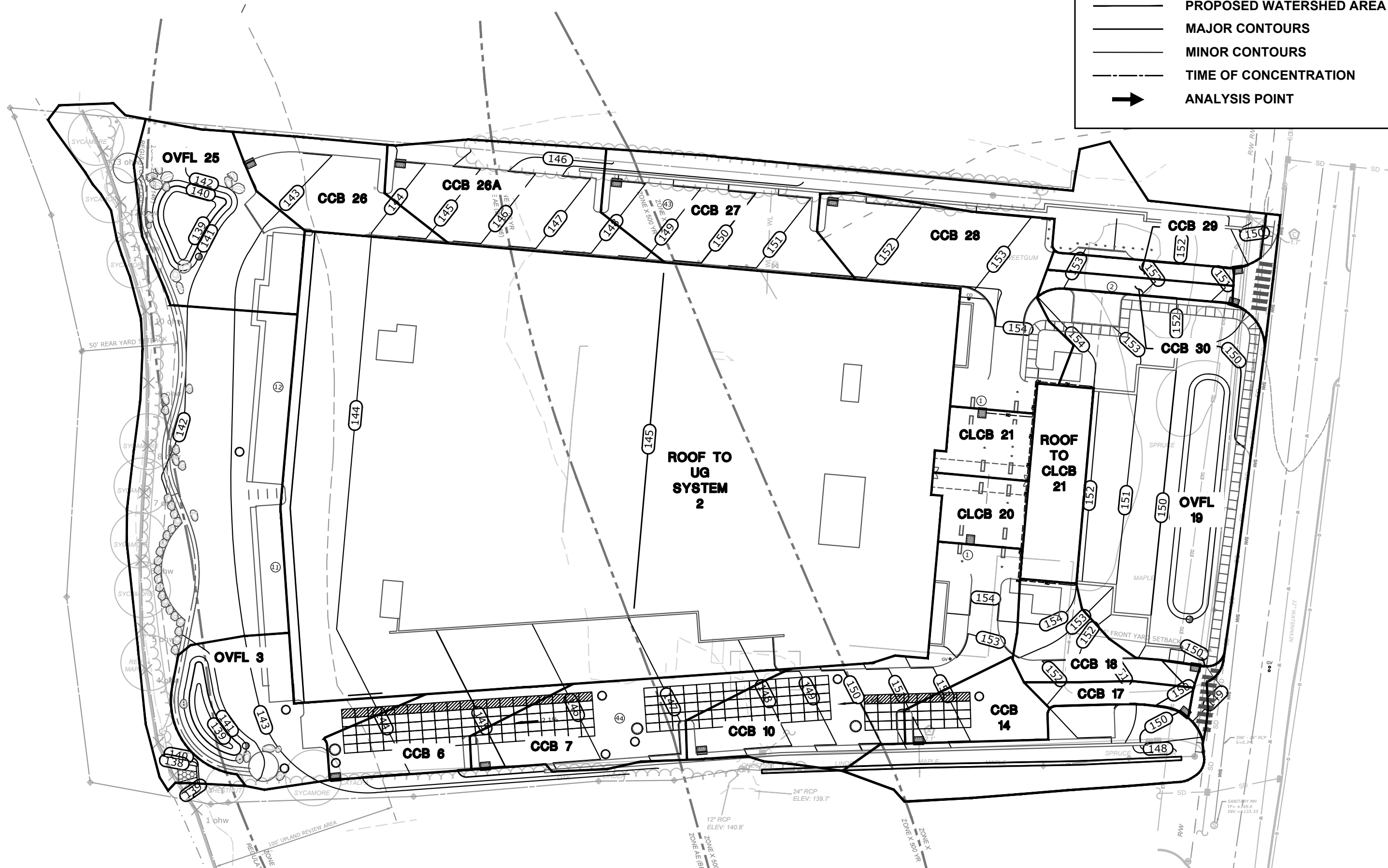
B (ft)= $2.0(S_p)+6.0(F)$ = n/a

Rip Rap Splash Pad Dimensions:

L_a	=	15	ft
$W_1 = 3.0(S_p)$ min.	=	6	ft
$W_2 = 3.0(S_p)+0.7(L_a)$ min.	=	17	ft
d (Depth of Stone)	=	12	inches

LEGEND

- PROPOSED WATERSHED AREA
- MAJOR CONTOURS
- MINOR CONTOURS
- TIME OF CONCENTRATION
-  ANALYSIS POINT



REVISIONS

NO.	DESCRIPTION

DRAINAGE AREA MAP - PROPOSED CONDITIONS
PROPOSED MULTI-FAMILY DEVELOPMENT
 131 DANBURY ROAD
 WILTON, CONNECTICUT

HM DESIGNED	HM DRAWN	MG CHECKED
SCALE 1"=50'		
DATE NOVEMBER 2, 2023		
PROJECT NO. 21543.00001		

CB



Appendix E

Water Quality Computations

Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023



Proposed Multi-Family Development
131 Danbury Road, Wilton, Connecticut

Water Quality Volume (WQV)

Site Area	=	4.752	ac
Impervious Area	=	2.96	ac
Percent Impervious Cover, I	=	62	%
Volumetric Runoff Coefficient, R	=		
$R=0.05 + 0.009(I)$	=	0.610	

Water Quality Volume

$WQV = \frac{(1")(R)(A)}{12}$	=	0.243	ac-ft
	=	10580	cf
Current site DCIA > 40%	=	5290	cf

Provided Water Quality Volume

North Infiltration Basin	=	580	cf
South Infiltration Basin	=	331	cf
Front Lawn Rain Garden	=	2409	CF
Infiltration System S-1	=	1263	cf
Infiltration System S-2	=	2875	cf
Infiltration System S-3	=	1917	cf
Total	=	9375	cf

Proposed Multi-Family Development
 131 Danbury Road, Wilton, Connecticut

Required Water Quality Flow (WQF)

Water Quality Volume = 0.243 ac-ft
 Drainage Area, A = 4.752 ac

Runoff Depth in Watershed inches, Q = 0.613 in

$$Q = \frac{WQV \times 12}{A}$$

Design Precipitation, P = 1 in

Runoff Curve Number, CN = 96

$$CN = \frac{1000}{[10 + 5P + 10Q - 10(Q^2 + 1.25QP)]^{\frac{1}{2}}}$$

From Table 4-1 in Chapter 4 of TR-55

Initial Abstraction, Ia = 0.128 in

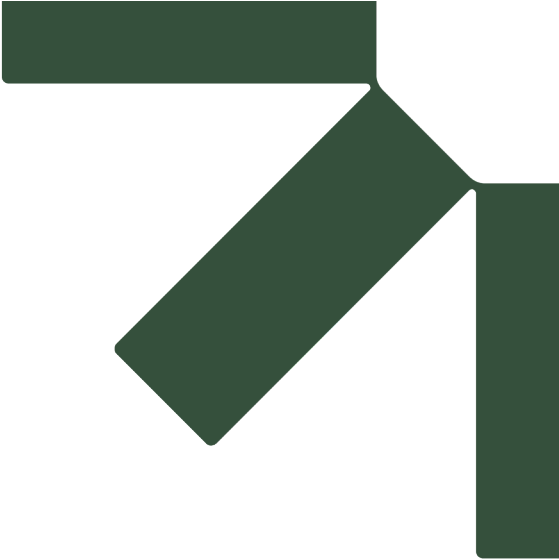
Ia/P = 0.128

From Exhibit 4-III in Chapter 4 of TR-55

qu = Unit Peak Discharge = 650 csm/in

Water Quality Flow (WQF)

$$WQF = (q_u)(A)(Q) = 2.96 \text{ cfs}$$



Appendix F

Hydrologic Analysis - Existing Conditions

Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023





Norwalk River



West-Parking & Building



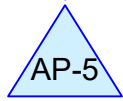
Front Lawn



Front Lawn Landscaped Area



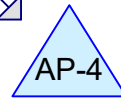
Entrance Drive



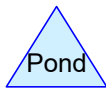
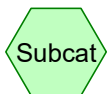
DI#5



Landscaped Area South of Entrance Drive



Landscaped Area



AMSW_Existing

Prepared by SLR International Corporation

Printed 10/18/2023

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	NRCC 24-hr	C	Default	24.00	1	3.53	2
2	10-yr	NRCC 24-hr	C	Default	24.00	1	5.39	2
3	25-yr	NRCC 24-hr	C	Default	24.00	1	6.56	2
4	50-yr	NRCC 24-hr	C	Default	24.00	1	7.42	2
5	100-yr	NRCC 24-hr	C	Default	24.00	1	8.35	2

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Existing Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"

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Page 3

Summary for Subcatchment EX-1: West-Parking & Building

Runoff = 8.92 cfs @ 12.22 hrs, Volume= 0.864 af, Depth= 2.97"
Routed to Pond AP-1 : Norwalk River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
67,673	98	Paved parking, HSG D
18,349	98	Paved parking, HSG C
* 1,675	98	Concrete, HSG D
38,351	98	Roofs, HSG D
17,092	80	>75% Grass cover, Good, HSG D
* 144	79	Landscaping., Good, HSG D
8,301	77	Woods, Good, HSG D
565	70	Woods, Good, HSG C
152,150	95	Weighted Average
26,102		17.16% Pervious Area
126,048		82.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0270	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
5.5	275	0.0140	0.83		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.8	119	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	22	0.2270	2.38		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
14.8	516	Total			

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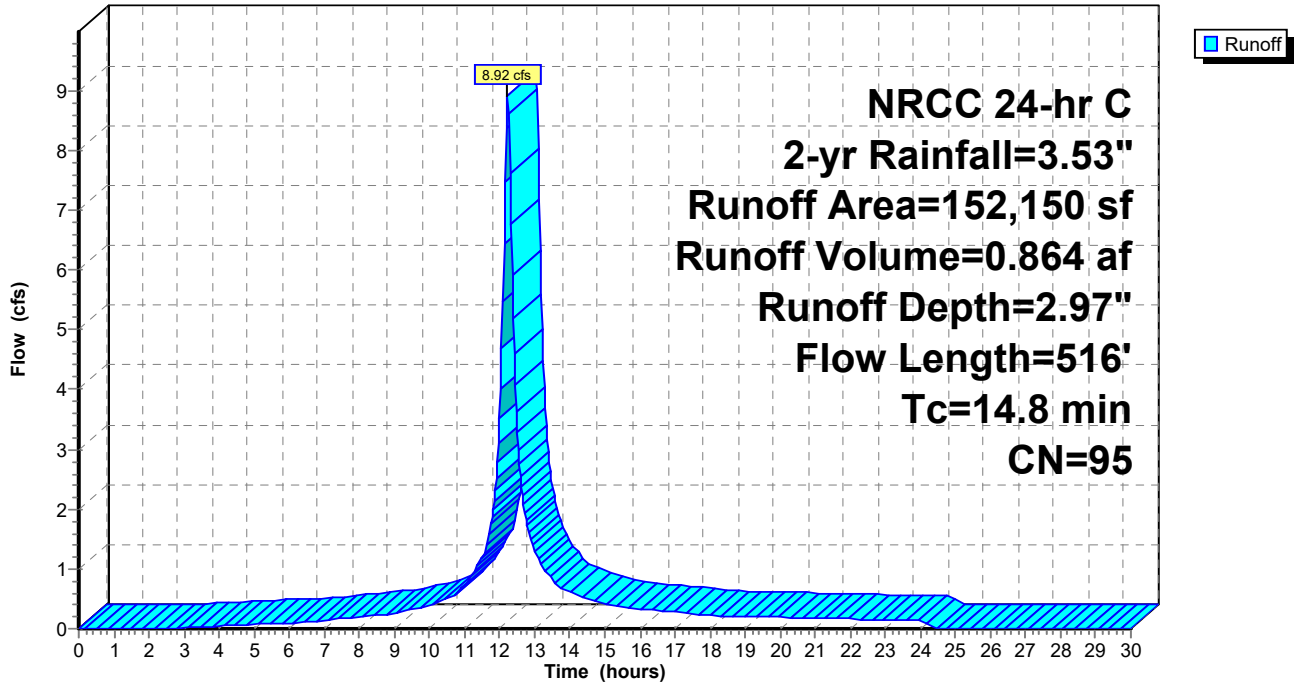
Existing Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"

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Subcatchment EX-1: West-Parking & Building

Hydrograph



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Existing Conditions
 NRCC 24-hr C 2-yr Rainfall=3.53"
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 Page 5

Summary for Subcatchment EX-2: Front Lawn

Runoff = 0.88 cfs @ 12.19 hrs, Volume= 0.070 af, Depth= 1.73"
 Routed to Pond AP-2 : Front Lawn Landscaped Area

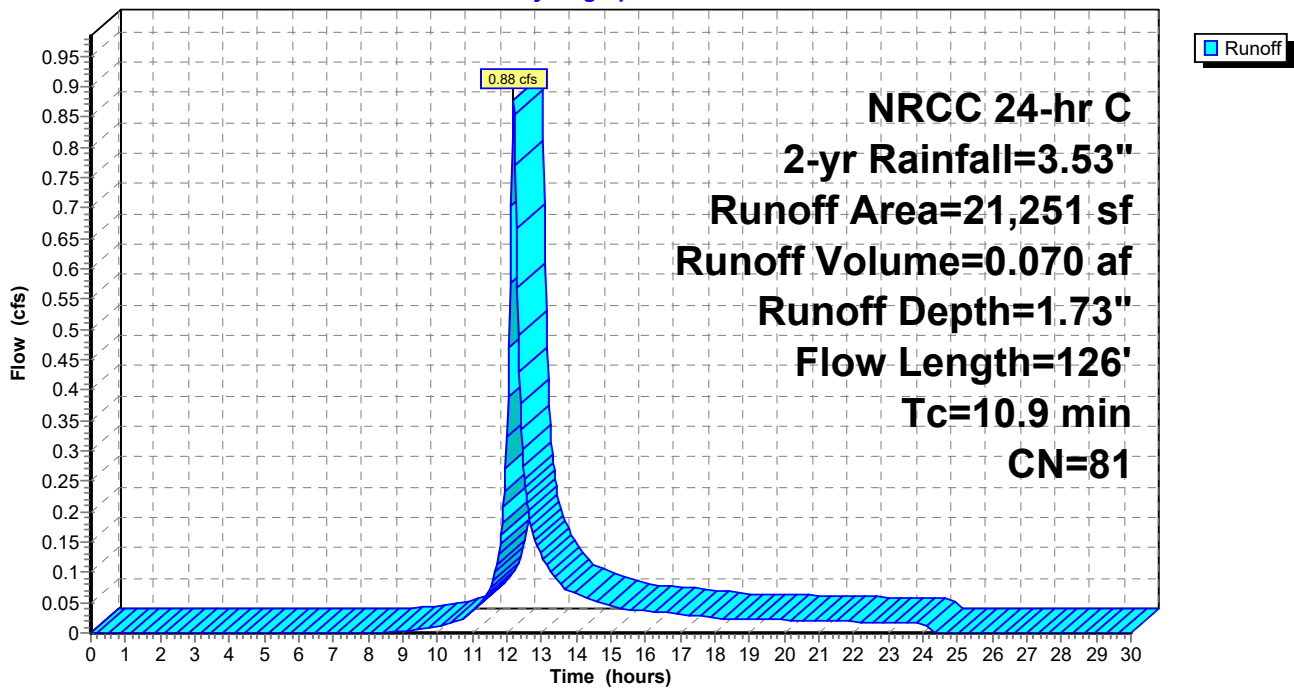
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

	Area (sf)	CN	Description
*	721	98	Concrete, HSG D
	19,154	80	>75% Grass cover, Good, HSG D
*	1,376	79	Landscaping, Good, HSG D
	21,251	81	Weighted Average
	20,530		96.61% Pervious Area
	721		3.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0150	0.16		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
0.4	26	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
10.9	126	Total			

Subcatchment EX-2: Front Lawn

Hydrograph



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Existing Conditions
 NRCC 24-hr C 2-yr Rainfall=3.53"
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Summary for Subcatchment EX-3: Entrance Drive

Runoff = 1.52 cfs @ 12.18 hrs, Volume= 0.122 af, Depth= 2.48"
 Routed to Pond AP-5 : DI#5

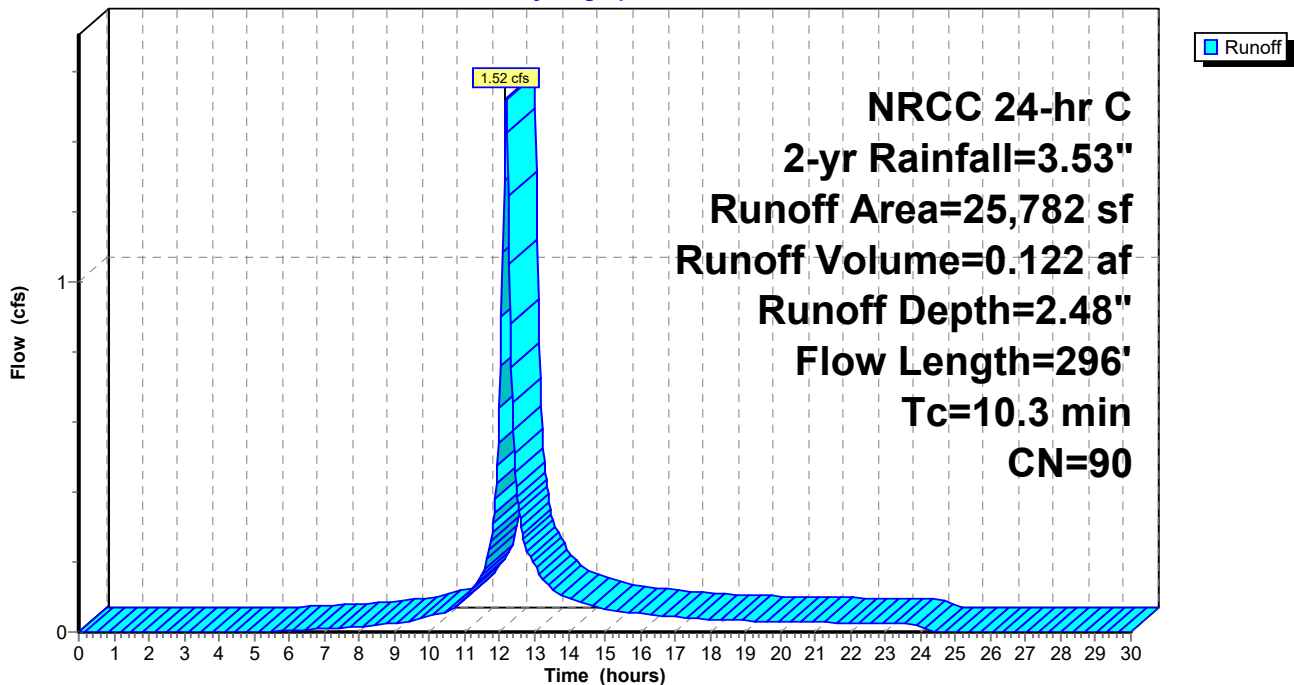
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
9,910	98	Paved parking, HSG D
* 814	98	Concrete, HSG D
3,130	98	Roofs, HSG D
9,334	80	>75% Grass cover, Good, HSG D
* 2,594	79	Landscaping, Good, HSG D
25,782	90	Weighted Average
11,928		46.26% Pervious Area
13,854		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	92	0.0200	0.18		Sheet Flow, A-B
1.6	204	0.0110	2.13		Grass: Short n= 0.150 P2= 3.53" Shallow Concentrated Flow, B-C
10.3	296	Total			Paved Kv= 20.3 fps

Subcatchment EX-3: Entrance Drive

Hydrograph



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Existing Conditions
 NRCC 24-hr C 2-yr Rainfall=3.53"
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Summary for Subcatchment EX-4: Landscaped Area South of Entrance Drive

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.005 af, Depth= 1.59"
 Routed to Pond AP-4 : Landscaped Area

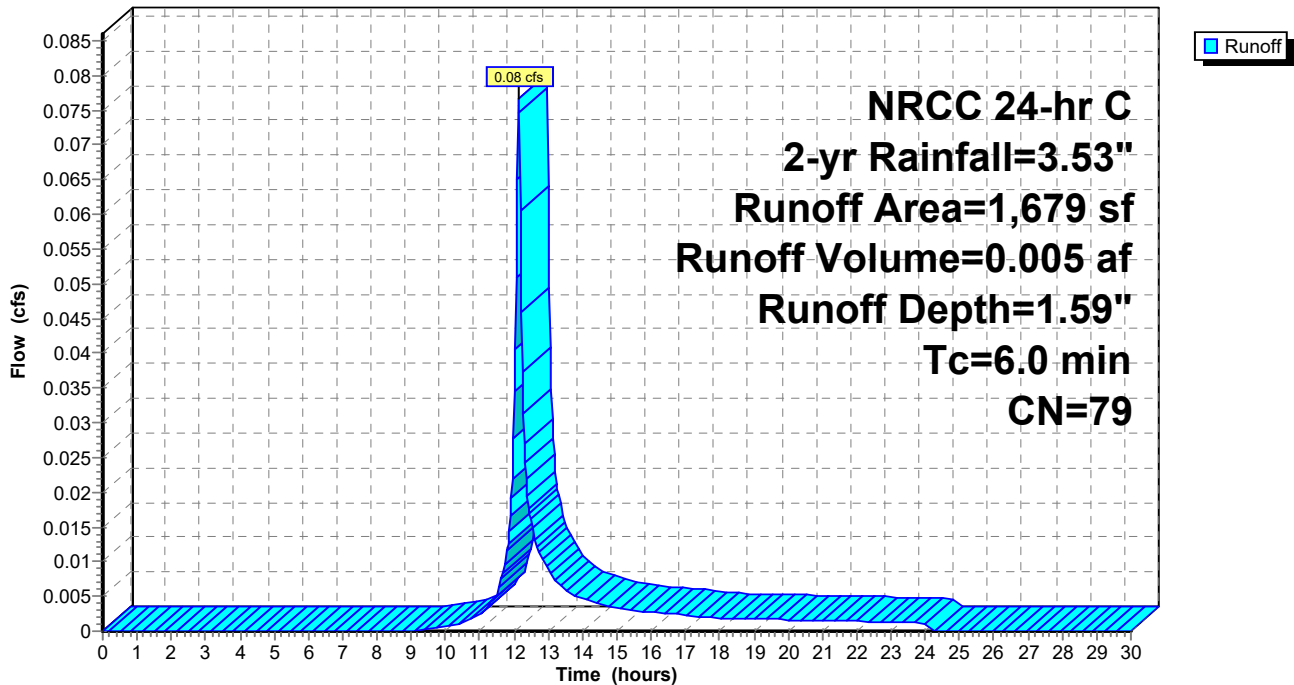
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
510	80	>75% Grass cover, Good, HSG D
* 1,169	79	Landscaping, Good, HSG D
1,679	79	Weighted Average
1,679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Minimum

Subcatchment EX-4: Landscaped Area South of Entrance Drive

Hydrograph



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Existing Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"

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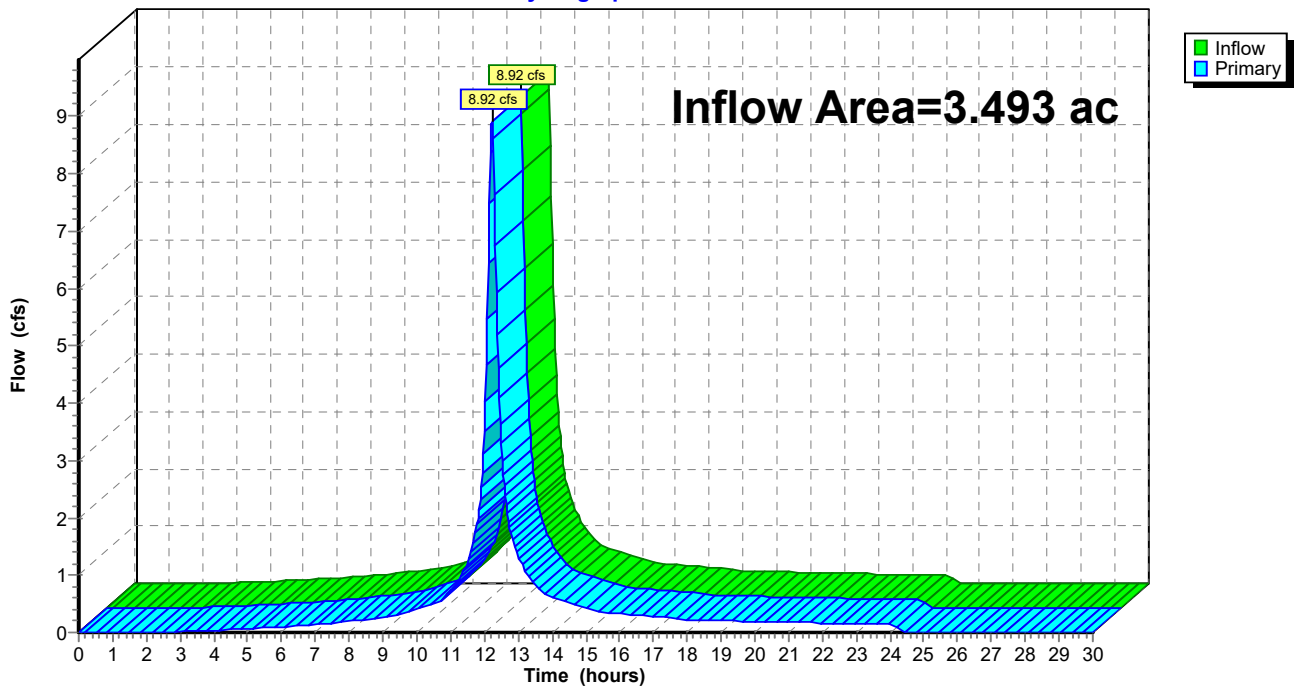
Summary for Pond AP-1: Norwalk River

Inflow Area = 3.493 ac, 82.84% Impervious, Inflow Depth = 2.97" for 2-yr event
Inflow = 8.92 cfs @ 12.22 hrs, Volume= 0.864 af
Primary = 8.92 cfs @ 12.22 hrs, Volume= 0.864 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



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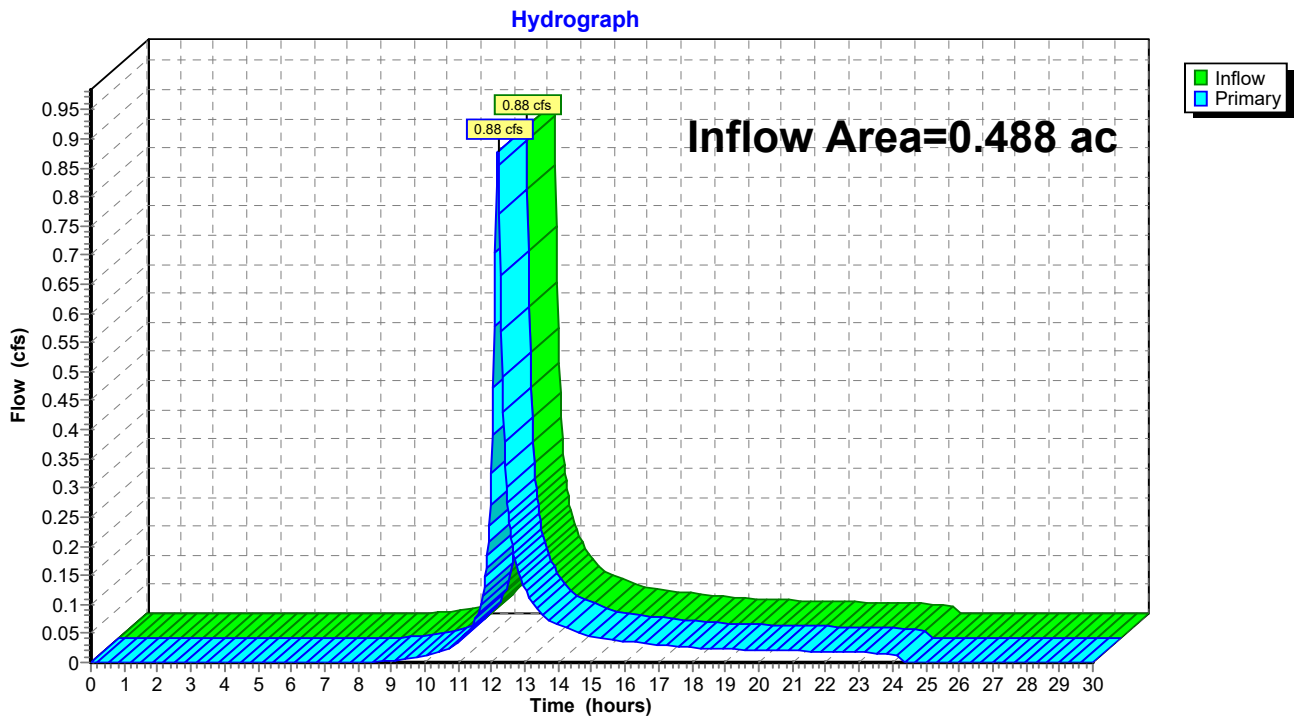
Existing Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"
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Summary for Pond AP-2: Front Lawn Landscaped Area

Inflow Area = 0.488 ac, 3.39% Impervious, Inflow Depth = 1.73" for 2-yr event
Inflow = 0.88 cfs @ 12.19 hrs, Volume= 0.070 af
Primary = 0.88 cfs @ 12.19 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-2: Front Lawn Landscaped Area



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Existing Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"

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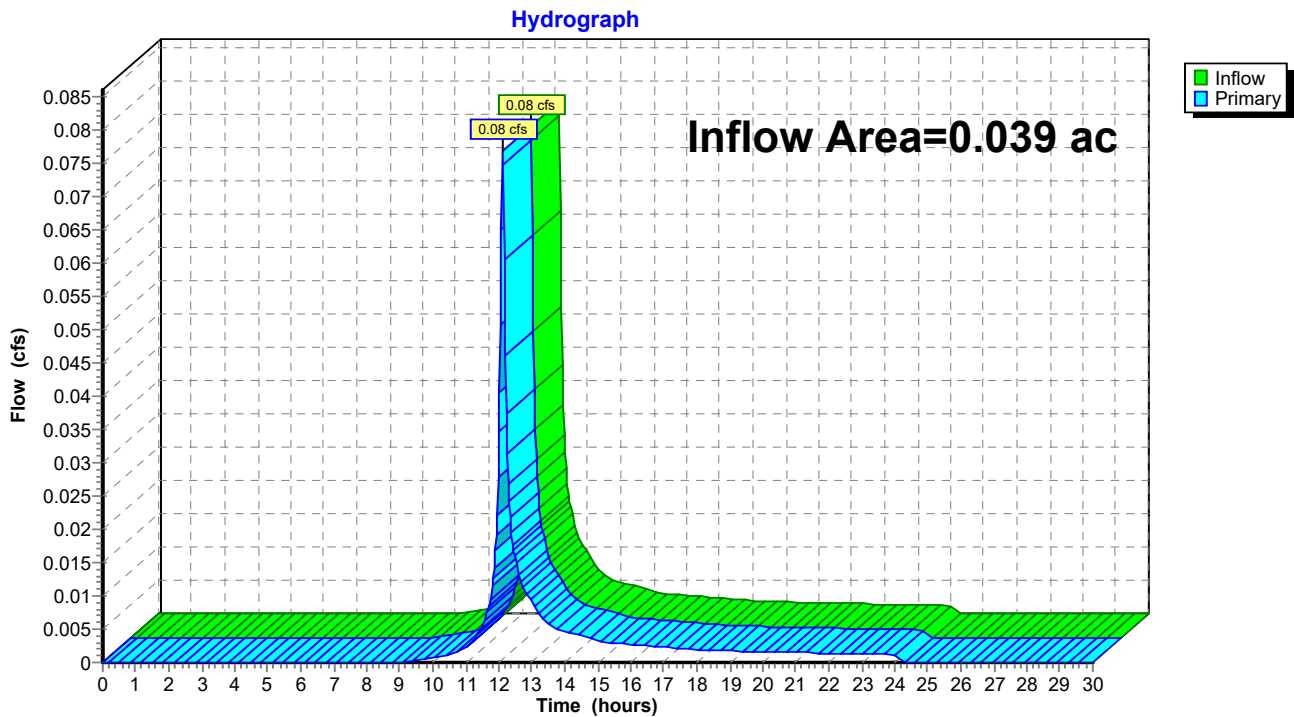
Page 10

Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.039 ac, 0.00% Impervious, Inflow Depth = 1.59" for 2-yr event
Inflow = 0.08 cfs @ 12.13 hrs, Volume= 0.005 af
Primary = 0.08 cfs @ 12.13 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Existing Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"

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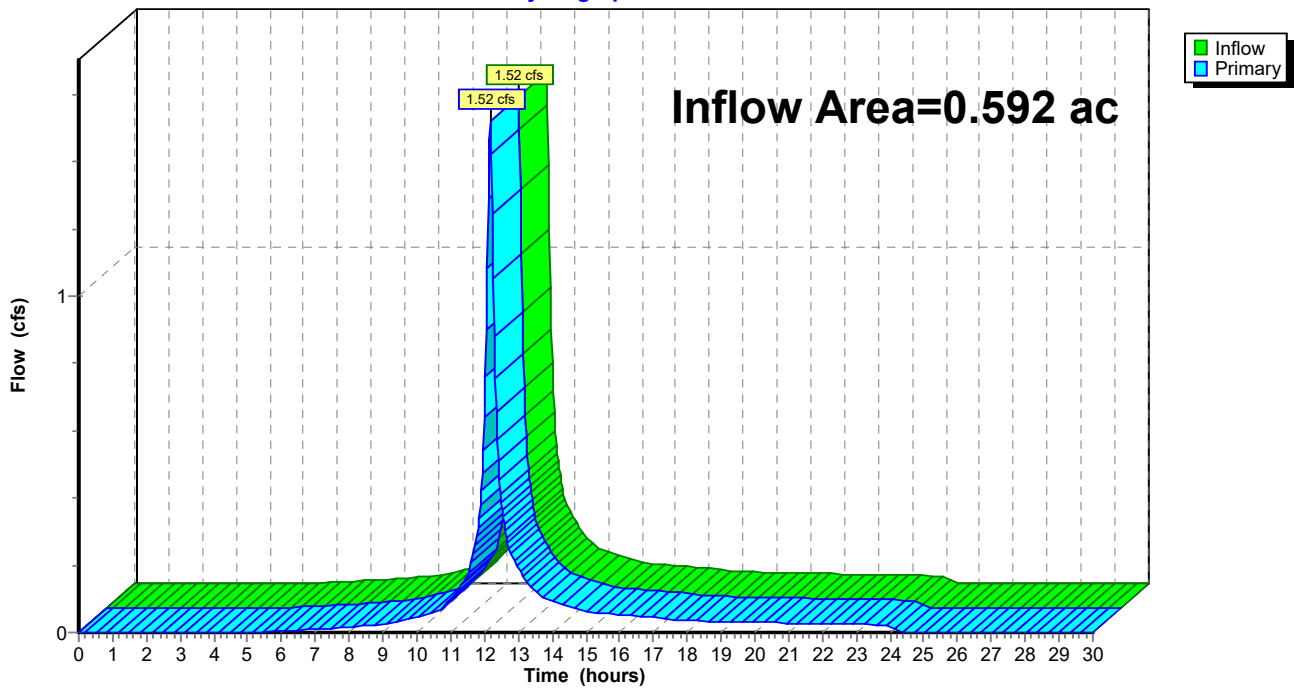
Summary for Pond AP-5: DI#5

Inflow Area = 0.592 ac, 53.74% Impervious, Inflow Depth = 2.48" for 2-yr event
Inflow = 1.52 cfs @ 12.18 hrs, Volume= 0.122 af
Primary = 1.52 cfs @ 12.18 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-5: DI#5

Hydrograph



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Existing Conditions
NRCC 24-hr C 10-yr Rainfall=5.39"

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Summary for Subcatchment EX-1: West-Parking & Building

Runoff = 14.05 cfs @ 12.22 hrs, Volume= 1.399 af, Depth= 4.81"
Routed to Pond AP-1 : Norwalk River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
67,673	98	Paved parking, HSG D
18,349	98	Paved parking, HSG C
* 1,675	98	Concrete, HSG D
38,351	98	Roofs, HSG D
17,092	80	>75% Grass cover, Good, HSG D
* 144	79	Landscaping., Good, HSG D
8,301	77	Woods, Good, HSG D
565	70	Woods, Good, HSG C
152,150	95	Weighted Average
26,102		17.16% Pervious Area
126,048		82.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0270	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
5.5	275	0.0140	0.83		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.8	119	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	22	0.2270	2.38		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
14.8	516	Total			

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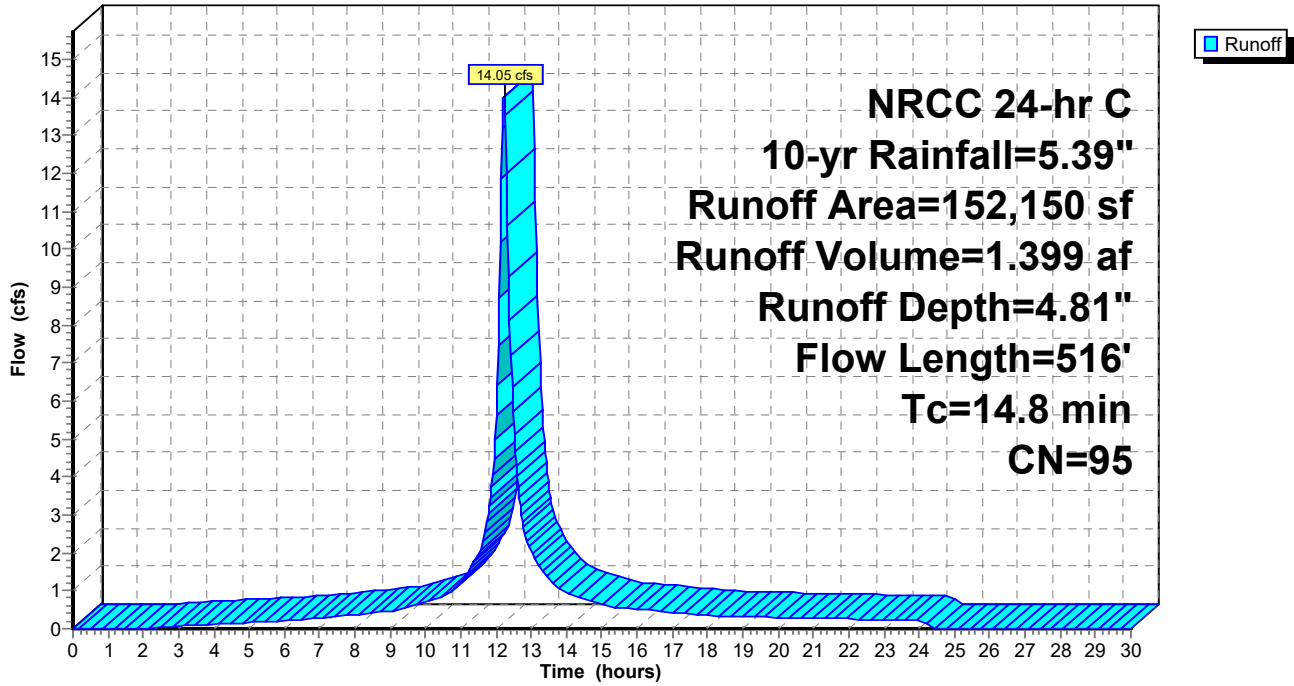
Existing Conditions
NRCC 24-hr C 10-yr Rainfall=5.39"

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Subcatchment EX-1: West-Parking & Building

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Existing Conditions
 NRCC 24-hr C 10-yr Rainfall=5.39"
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Summary for Subcatchment EX-2: Front Lawn

Runoff = 1.68 cfs @ 12.18 hrs, Volume= 0.135 af, Depth= 3.33"
 Routed to Pond AP-2 : Front Lawn Landscaped Area

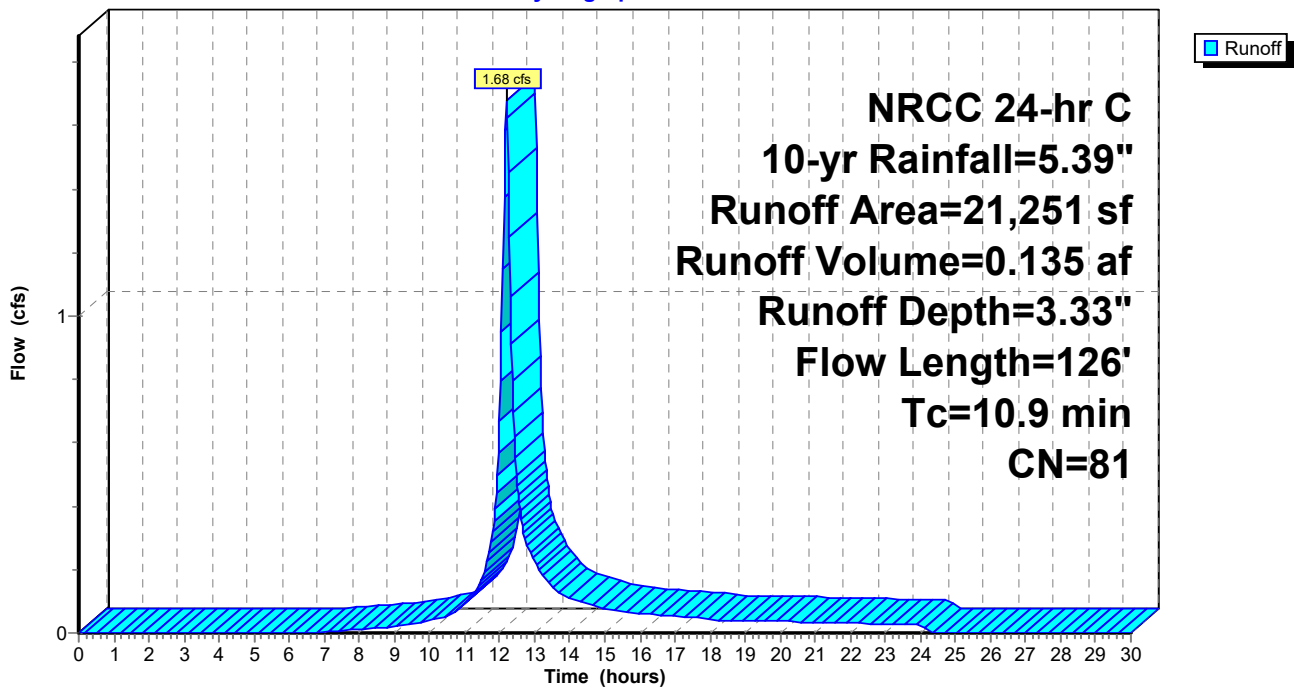
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

	Area (sf)	CN	Description
*	721	98	Concrete, HSG D
	19,154	80	>75% Grass cover, Good, HSG D
*	1,376	79	Landscaping, Good, HSG D
	21,251	81	Weighted Average
	20,530		96.61% Pervious Area
	721		3.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0150	0.16		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
0.4	26	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
10.9	126	Total			

Subcatchment EX-2: Front Lawn

Hydrograph



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Existing Conditions
 NRCC 24-hr C 10-yr Rainfall=5.39"
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Summary for Subcatchment EX-3: Entrance Drive

Runoff = 2.54 cfs @ 12.17 hrs, Volume= 0.210 af, Depth= 4.25"
 Routed to Pond AP-5 : DI#5

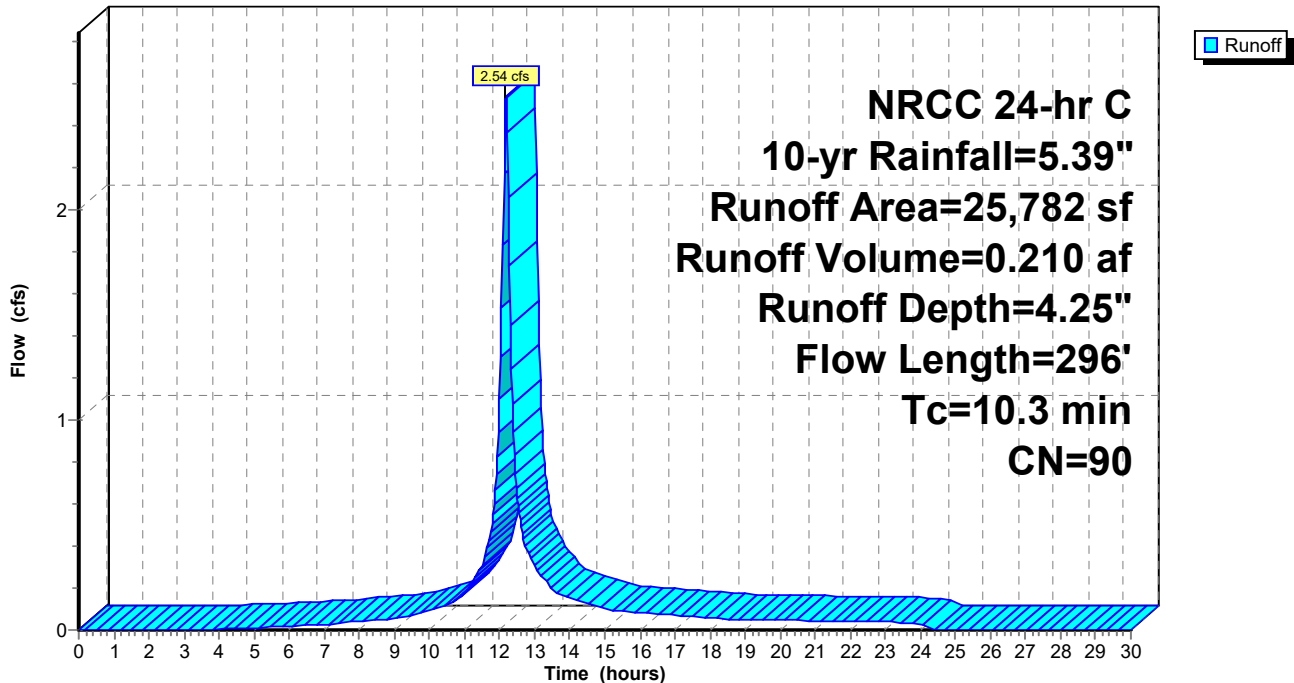
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
9,910	98	Paved parking, HSG D
* 814	98	Concrete, HSG D
3,130	98	Roofs, HSG D
9,334	80	>75% Grass cover, Good, HSG D
* 2,594	79	Landscaping, Good, HSG D
25,782	90	Weighted Average
11,928		46.26% Pervious Area
13,854		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	92	0.0200	0.18		Sheet Flow, A-B
1.6	204	0.0110	2.13		Grass: Short n= 0.150 P2= 3.53" Shallow Concentrated Flow, B-C
10.3	296	Total			Paved Kv= 20.3 fps

Subcatchment EX-3: Entrance Drive

Hydrograph



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Existing Conditions
 NRCC 24-hr C 10-yr Rainfall=5.39"
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Summary for Subcatchment EX-4: Landscaped Area South of Entrance Drive

Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 3.14"
 Routed to Pond AP-4 : Landscaped Area

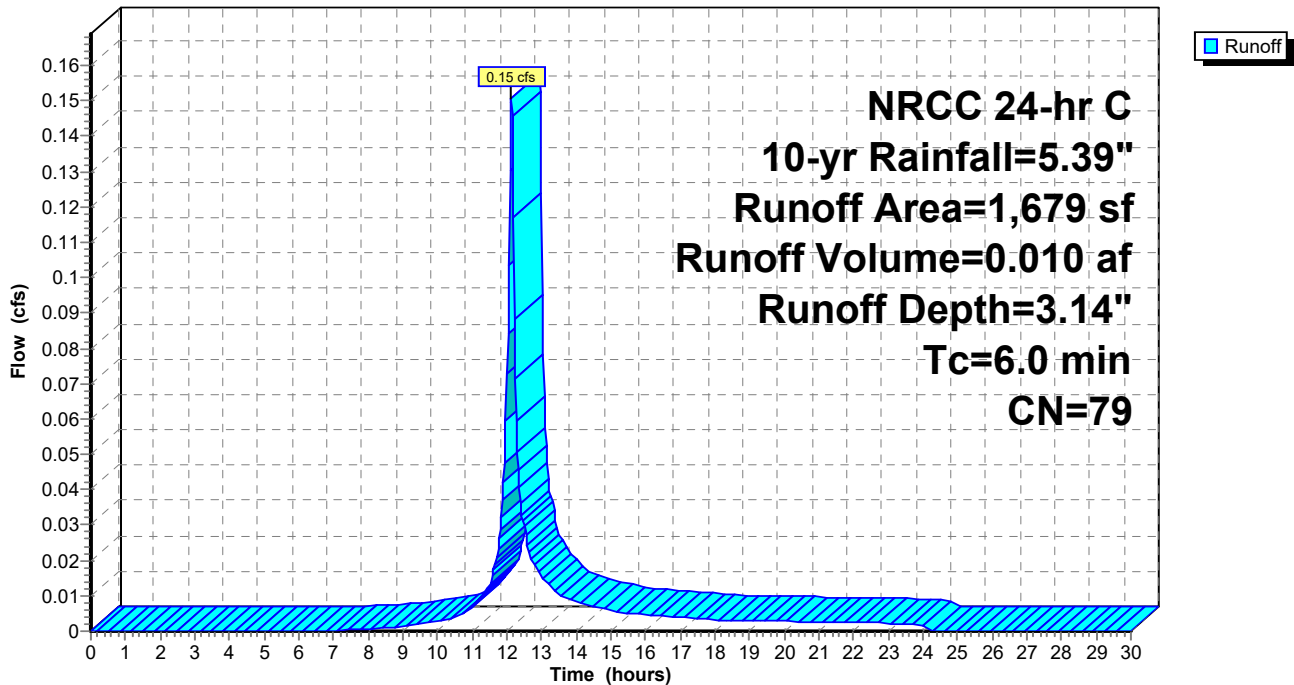
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
510	80	>75% Grass cover, Good, HSG D
* 1,169	79	Landscaping, Good, HSG D
1,679	79	Weighted Average
1,679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Minimum

Subcatchment EX-4: Landscaped Area South of Entrance Drive

Hydrograph



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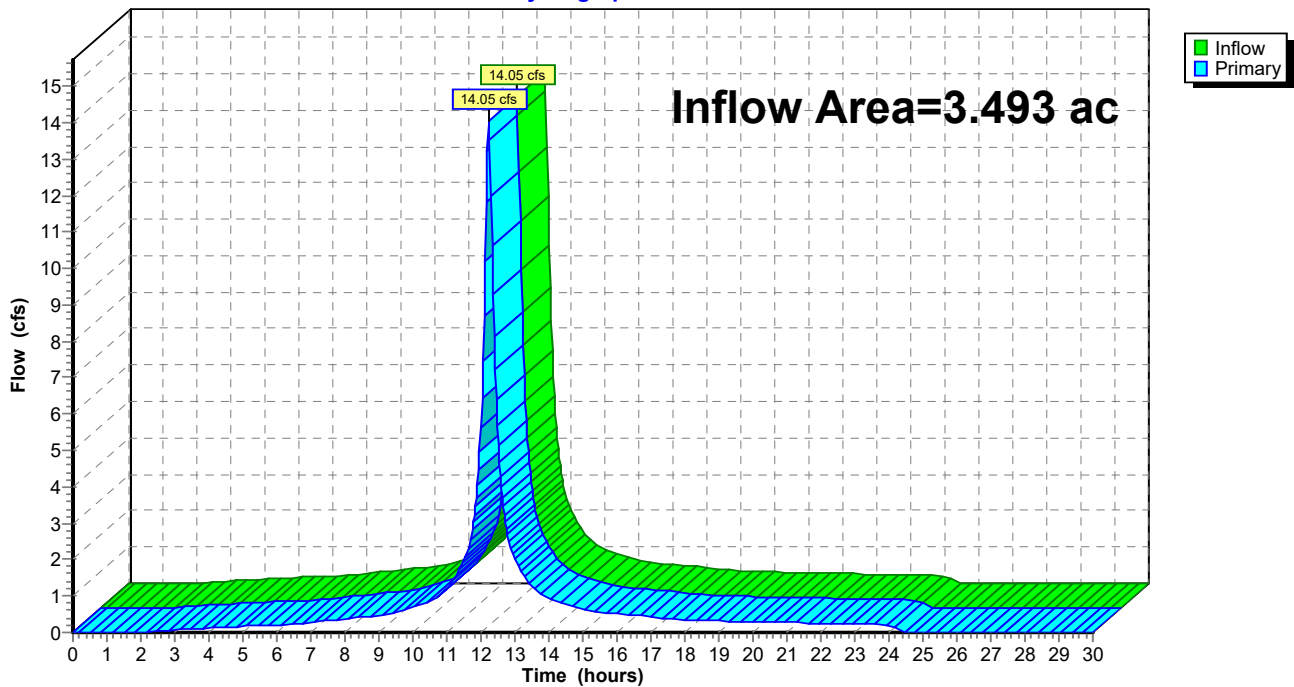
Summary for Pond AP-1: Norwalk River

Inflow Area = 3.493 ac, 82.84% Impervious, Inflow Depth = 4.81" for 10-yr event
Inflow = 14.05 cfs @ 12.22 hrs, Volume= 1.399 af
Primary = 14.05 cfs @ 12.22 hrs, Volume= 1.399 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



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Existing Conditions
NRCC 24-hr C 10-yr Rainfall=5.39"

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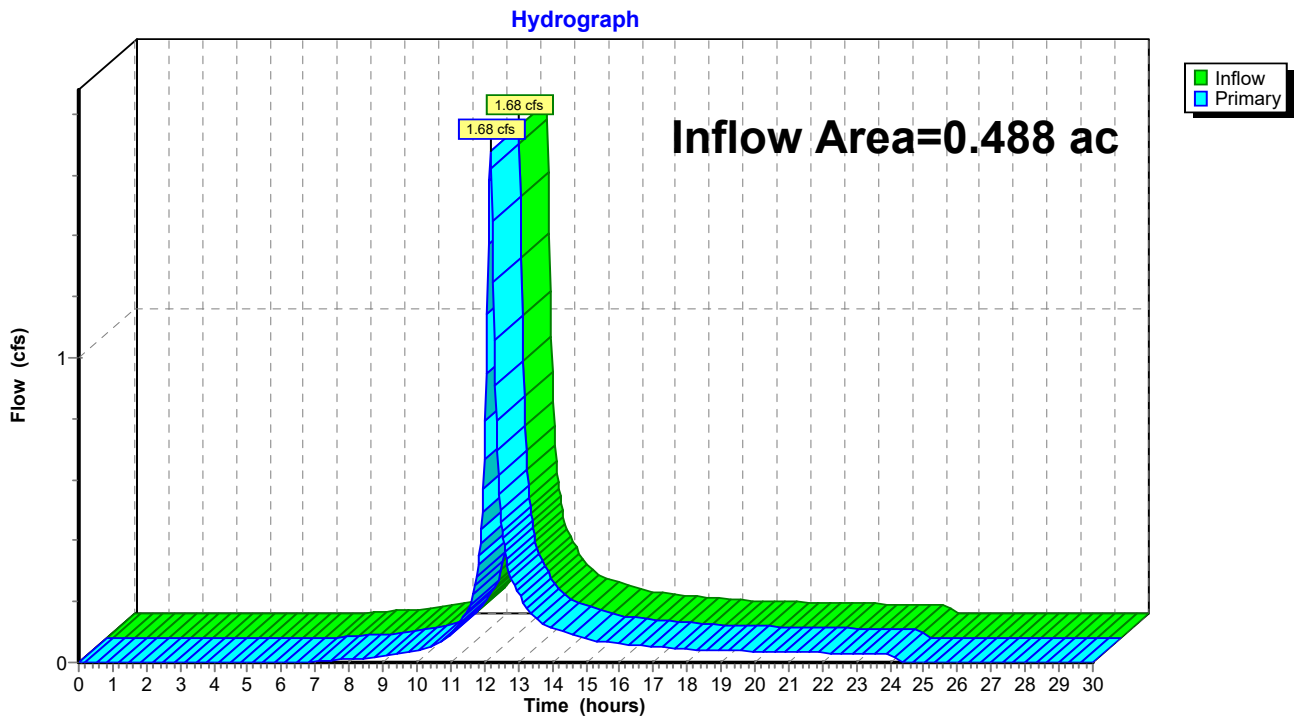
Page 18

Summary for Pond AP-2: Front Lawn Landscaped Area

Inflow Area = 0.488 ac, 3.39% Impervious, Inflow Depth = 3.33" for 10-yr event
Inflow = 1.68 cfs @ 12.18 hrs, Volume= 0.135 af
Primary = 1.68 cfs @ 12.18 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-2: Front Lawn Landscaped Area



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Existing Conditions
NRCC 24-hr C 10-yr Rainfall=5.39"

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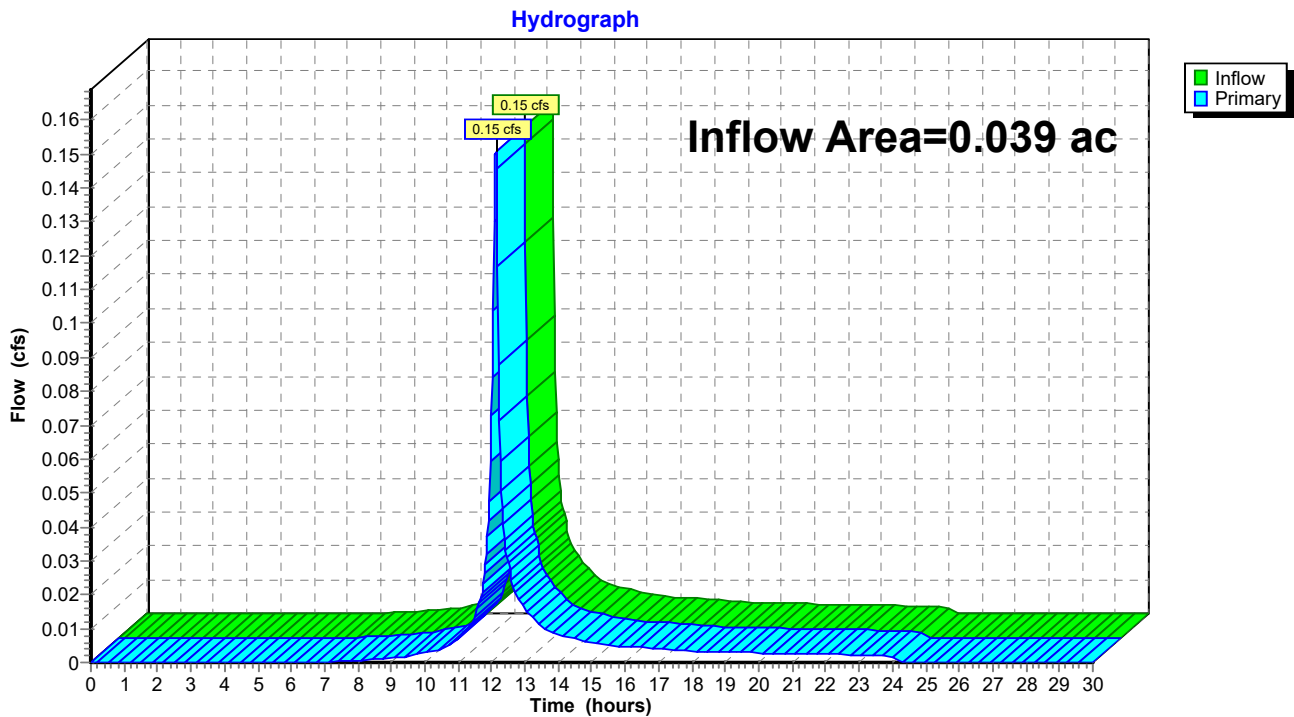
Page 19

Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.039 ac, 0.00% Impervious, Inflow Depth = 3.14" for 10-yr event
Inflow = 0.15 cfs @ 12.13 hrs, Volume= 0.010 af
Primary = 0.15 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Existing Conditions
NRCC 24-hr C 10-yr Rainfall=5.39"

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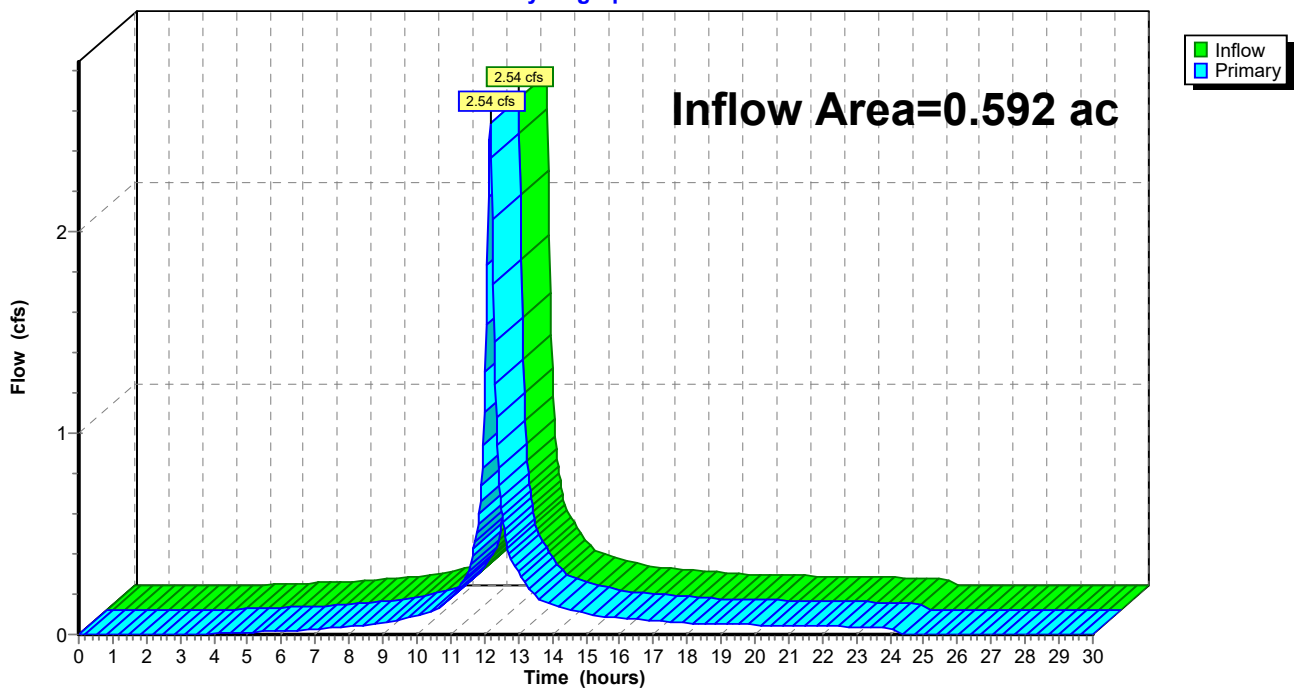
Summary for Pond AP-5: DI#5

Inflow Area = 0.592 ac, 53.74% Impervious, Inflow Depth = 4.25" for 10-yr event
Inflow = 2.54 cfs @ 12.17 hrs, Volume= 0.210 af
Primary = 2.54 cfs @ 12.17 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-5: DI#5

Hydrograph



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Existing Conditions

NRCC 24-hr C 25-yr Rainfall=6.56"

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Summary for Subcatchment EX-1: West-Parking & Building

Runoff = 17.24 cfs @ 12.22 hrs, Volume= 1.737 af, Depth= 5.97"
 Routed to Pond AP-1 : Norwalk River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
67,673	98	Paved parking, HSG D
18,349	98	Paved parking, HSG C
* 1,675	98	Concrete, HSG D
38,351	98	Roofs, HSG D
17,092	80	>75% Grass cover, Good, HSG D
* 144	79	Landscaping., Good, HSG D
8,301	77	Woods, Good, HSG D
565	70	Woods, Good, HSG C
152,150	95	Weighted Average
26,102		17.16% Pervious Area
126,048		82.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0270	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
5.5	275	0.0140	0.83		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.8	119	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	22	0.2270	2.38		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
14.8	516	Total			

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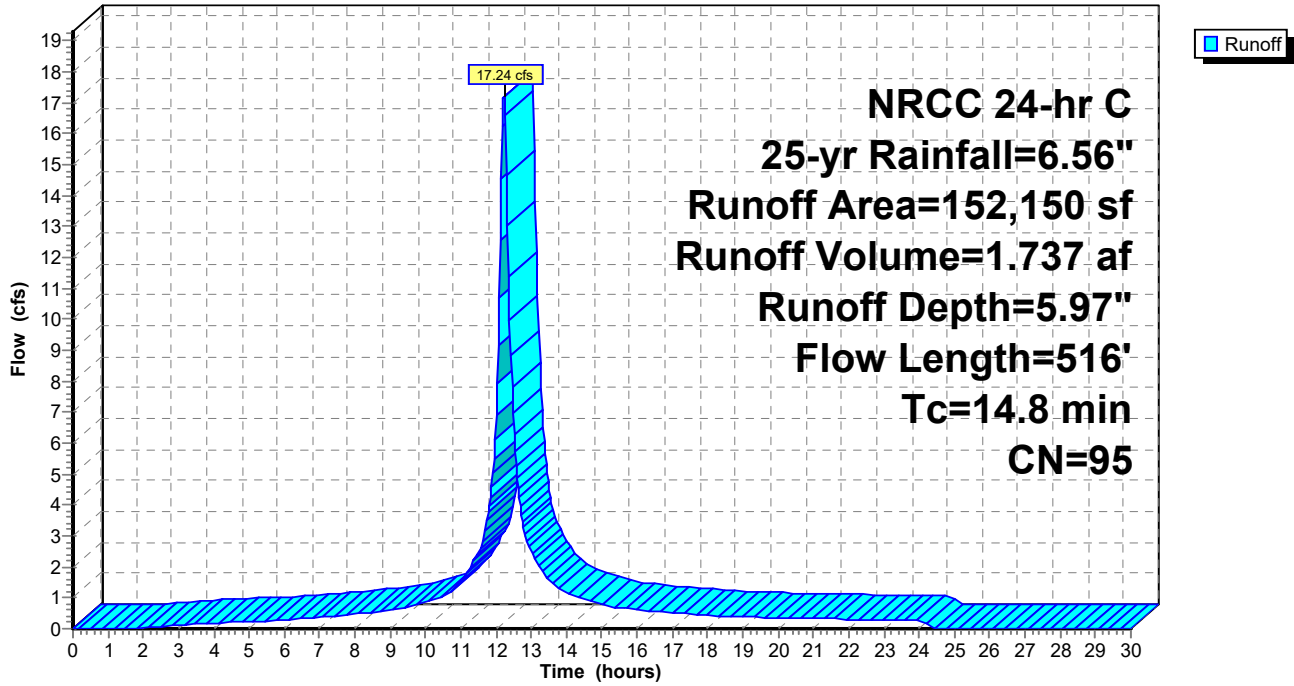
Existing Conditions
NRCC 24-hr C 25-yr Rainfall=6.56"

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Subcatchment EX-1: West-Parking & Building

Hydrograph



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Existing Conditions
 NRCC 24-hr C 25-yr Rainfall=6.56"
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Summary for Subcatchment EX-2: Front Lawn

Runoff = 2.20 cfs @ 12.18 hrs, Volume= 0.179 af, Depth= 4.40"
 Routed to Pond AP-2 : Front Lawn Landscaped Area

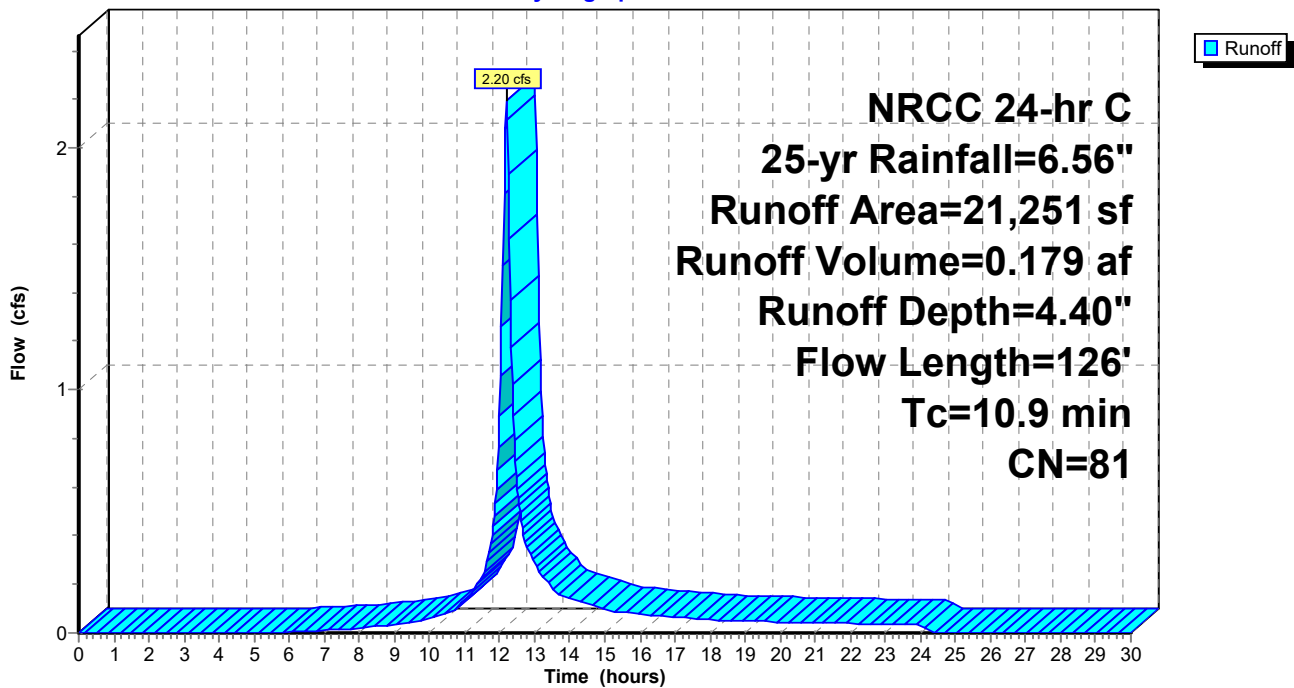
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	721	98	Concrete, HSG D
	19,154	80	>75% Grass cover, Good, HSG D
*	1,376	79	Landscaping, Good, HSG D
	21,251	81	Weighted Average
	20,530		96.61% Pervious Area
	721		3.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0150	0.16		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
0.4	26	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
10.9	126	Total			

Subcatchment EX-2: Front Lawn

Hydrograph



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Summary for Subcatchment EX-3: Entrance Drive

Runoff = 3.18 cfs @ 12.17 hrs, Volume= 0.266 af, Depth= 5.39"
 Routed to Pond AP-5 : DI#5

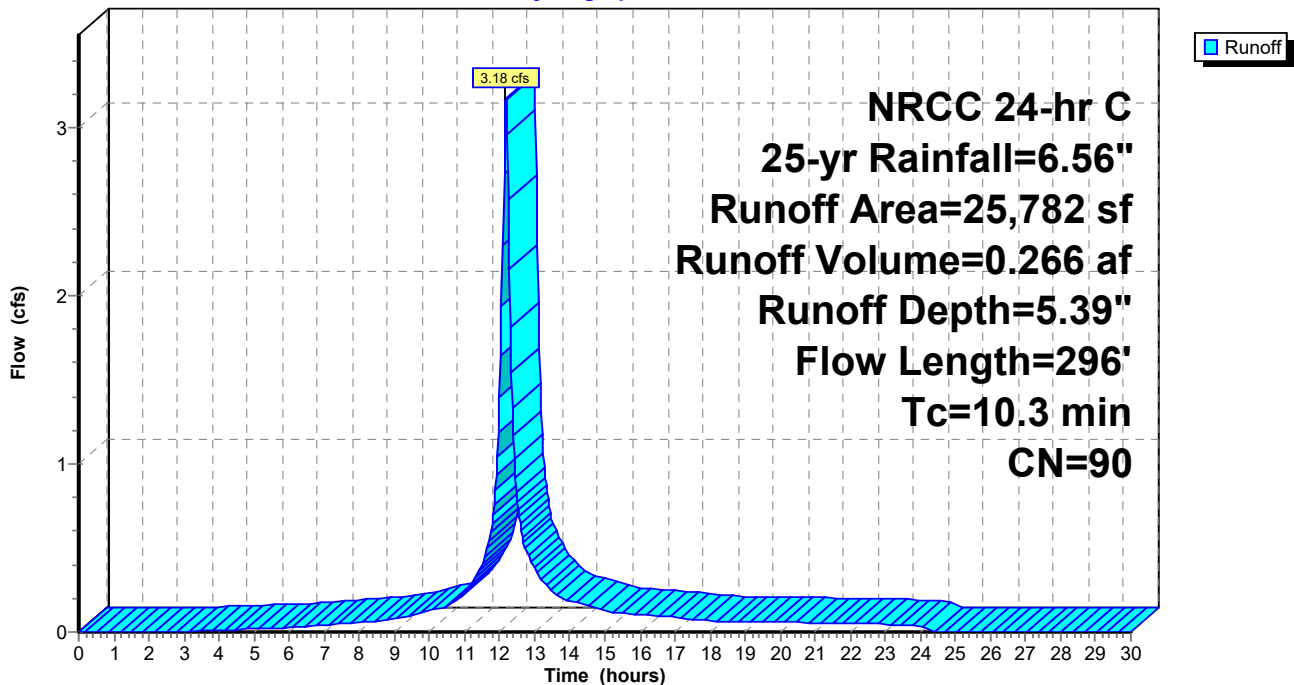
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
9,910	98	Paved parking, HSG D
* 814	98	Concrete, HSG D
3,130	98	Roofs, HSG D
9,334	80	>75% Grass cover, Good, HSG D
* 2,594	79	Landscaping, Good, HSG D
25,782	90	Weighted Average
11,928		46.26% Pervious Area
13,854		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	92	0.0200	0.18		Sheet Flow, A-B
1.6	204	0.0110	2.13		Grass: Short n= 0.150 P2= 3.53" Shallow Concentrated Flow, B-C
10.3	296	Total			Paved Kv= 20.3 fps

Subcatchment EX-3: Entrance Drive

Hydrograph



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Existing Conditions
 NRCC 24-hr C 25-yr Rainfall=6.56"
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Summary for Subcatchment EX-4: Landscaped Area South of Entrance Drive

Runoff = 0.20 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 4.18"
 Routed to Pond AP-4 : Landscaped Area

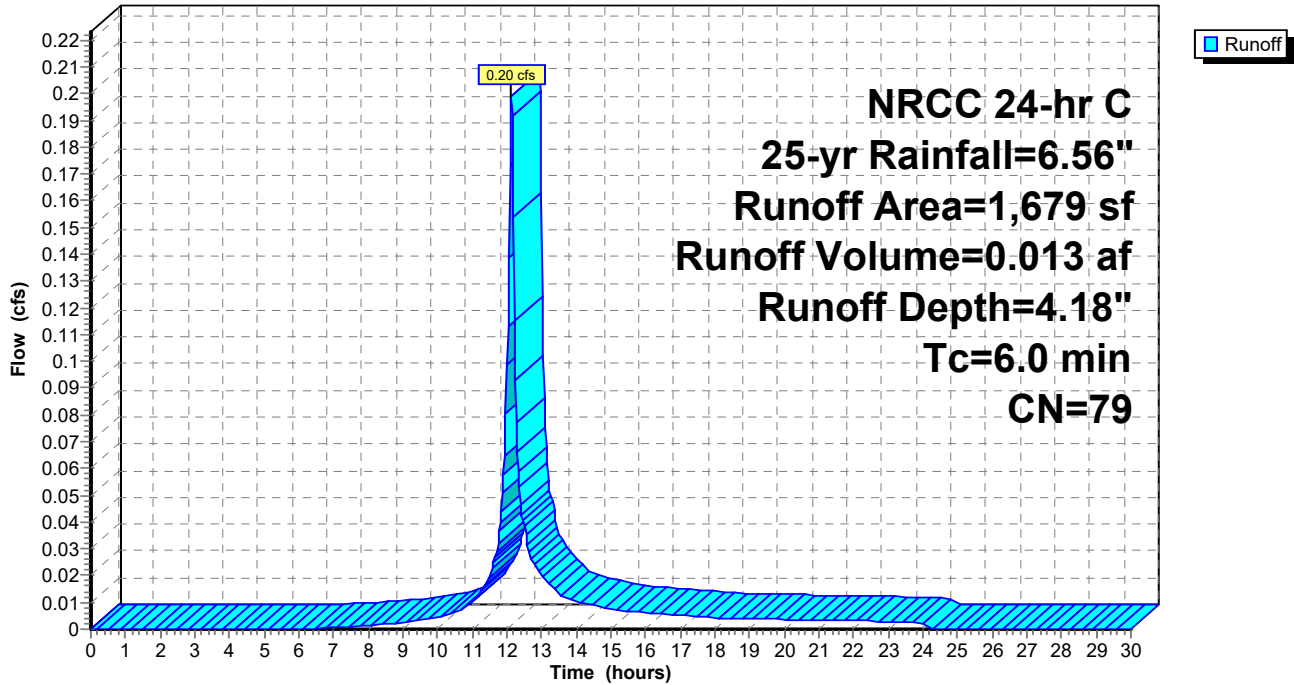
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
510	80	>75% Grass cover, Good, HSG D
* 1,169	79	Landscaping, Good, HSG D
1,679	79	Weighted Average
1,679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Minimum

Subcatchment EX-4: Landscaped Area South of Entrance Drive

Hydrograph



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NRCC 24-hr C 25-yr Rainfall=6.56"

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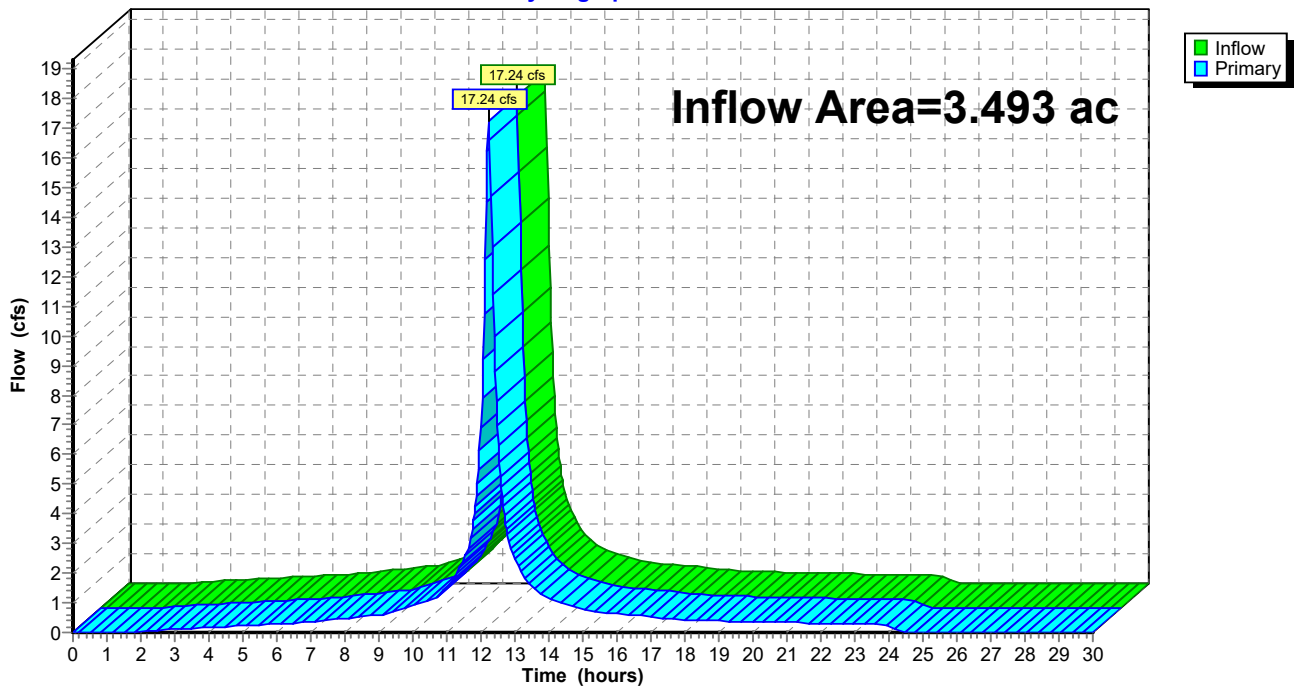
Summary for Pond AP-1: Norwalk River

Inflow Area = 3.493 ac, 82.84% Impervious, Inflow Depth = 5.97" for 25-yr event
Inflow = 17.24 cfs @ 12.22 hrs, Volume= 1.737 af
Primary = 17.24 cfs @ 12.22 hrs, Volume= 1.737 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



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Existing Conditions
NRCC 24-hr C 25-yr Rainfall=6.56"

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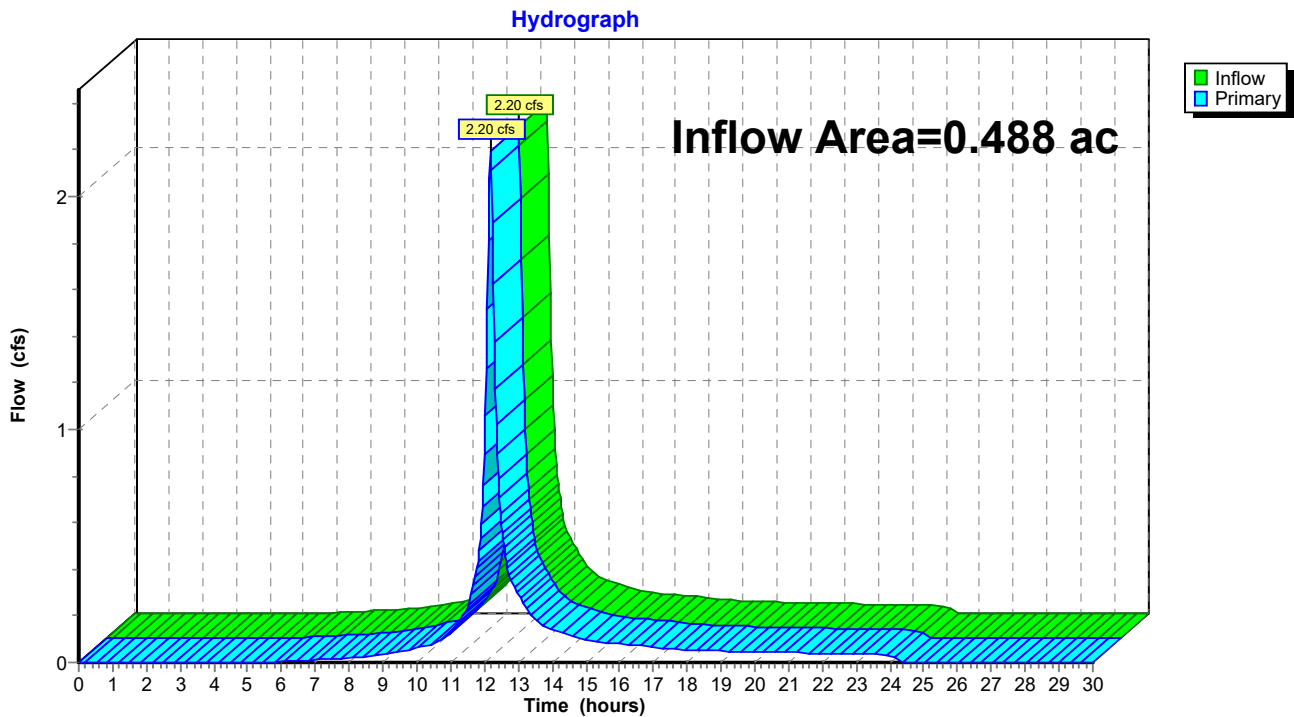
Page 27

Summary for Pond AP-2: Front Lawn Landscaped Area

Inflow Area = 0.488 ac, 3.39% Impervious, Inflow Depth = 4.40" for 25-yr event
Inflow = 2.20 cfs @ 12.18 hrs, Volume= 0.179 af
Primary = 2.20 cfs @ 12.18 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-2: Front Lawn Landscaped Area



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Existing Conditions
NRCC 24-hr C 25-yr Rainfall=6.56"

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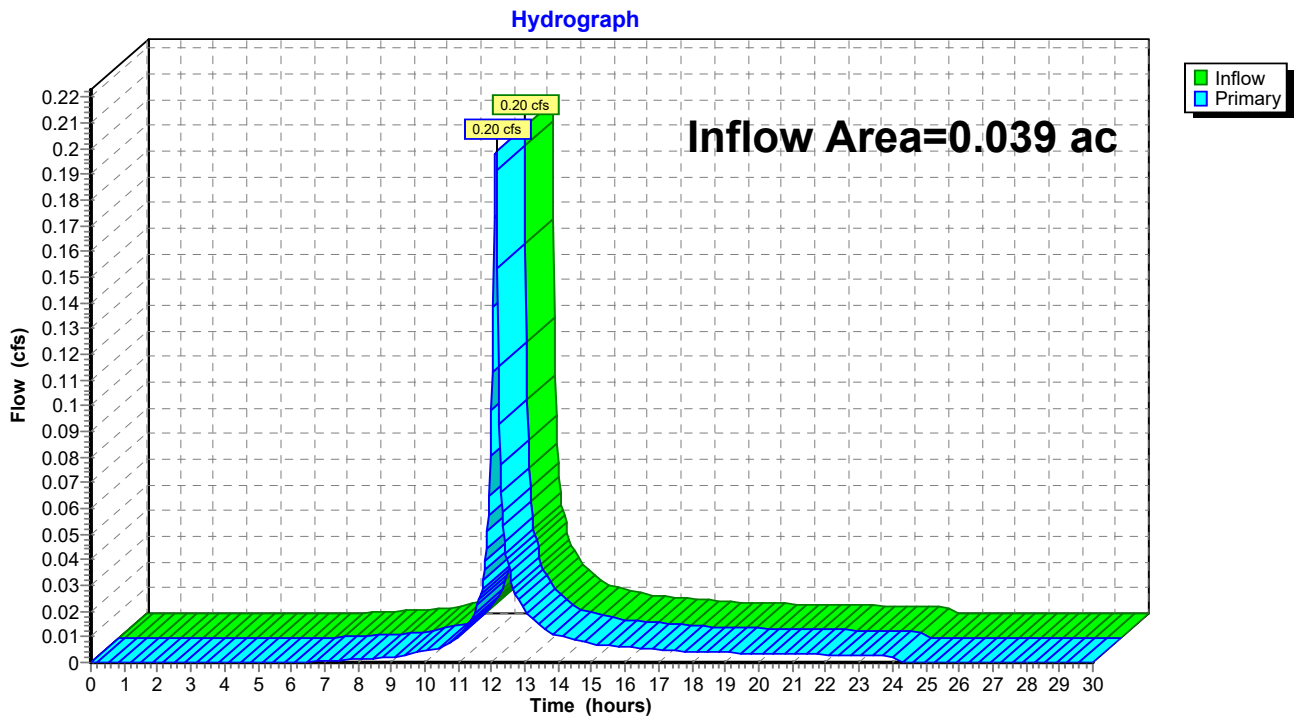
Page 28

Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.039 ac, 0.00% Impervious, Inflow Depth = 4.18" for 25-yr event
Inflow = 0.20 cfs @ 12.13 hrs, Volume= 0.013 af
Primary = 0.20 cfs @ 12.13 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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NRCC 24-hr C 25-yr Rainfall=6.56"

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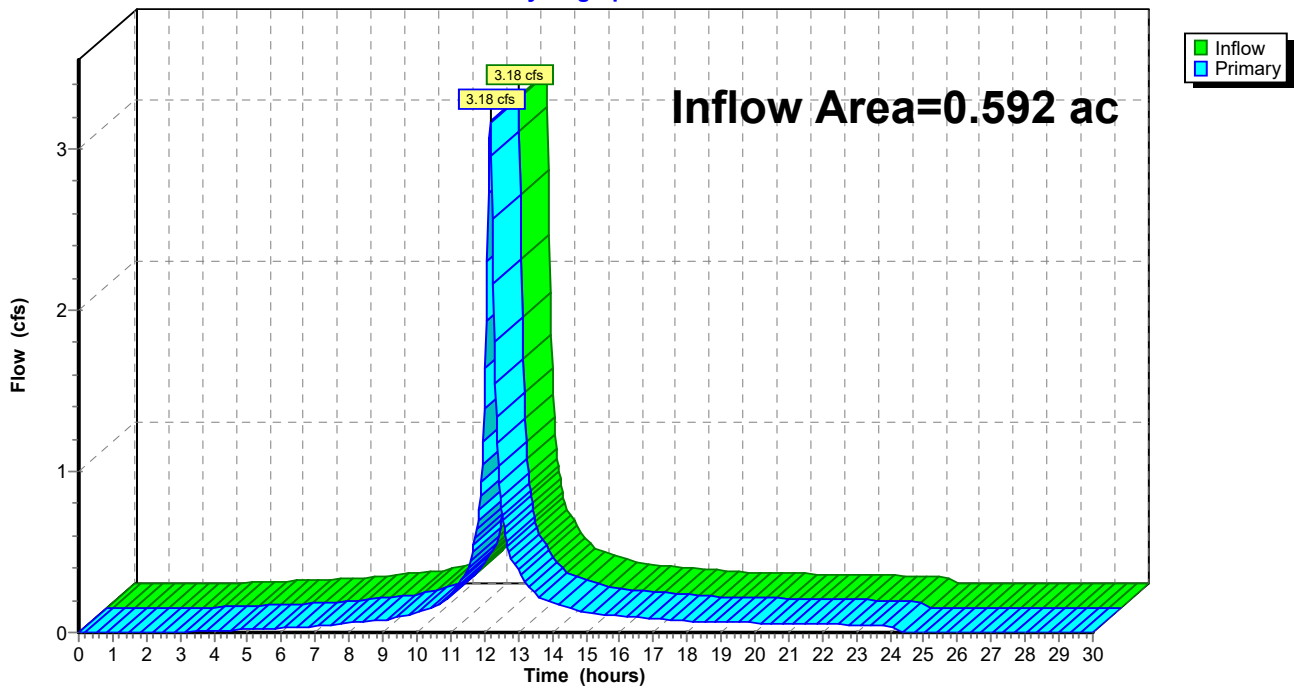
Summary for Pond AP-5: DI#5

Inflow Area = 0.592 ac, 53.74% Impervious, Inflow Depth = 5.39" for 25-yr event
Inflow = 3.18 cfs @ 12.17 hrs, Volume= 0.266 af
Primary = 3.18 cfs @ 12.17 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-5: DI#5

Hydrograph



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Existing Conditions

NRCC 24-hr C 50-yr Rainfall=7.42"

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Summary for Subcatchment EX-1: West-Parking & Building

Runoff = 19.58 cfs @ 12.22 hrs, Volume= 1.986 af, Depth= 6.82"
 Routed to Pond AP-1 : Norwalk River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
67,673	98	Paved parking, HSG D
18,349	98	Paved parking, HSG C
* 1,675	98	Concrete, HSG D
38,351	98	Roofs, HSG D
17,092	80	>75% Grass cover, Good, HSG D
* 144	79	Landscaping., Good, HSG D
8,301	77	Woods, Good, HSG D
565	70	Woods, Good, HSG C
152,150	95	Weighted Average
26,102		17.16% Pervious Area
126,048		82.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0270	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
5.5	275	0.0140	0.83		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.8	119	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	22	0.2270	2.38		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
14.8	516	Total			

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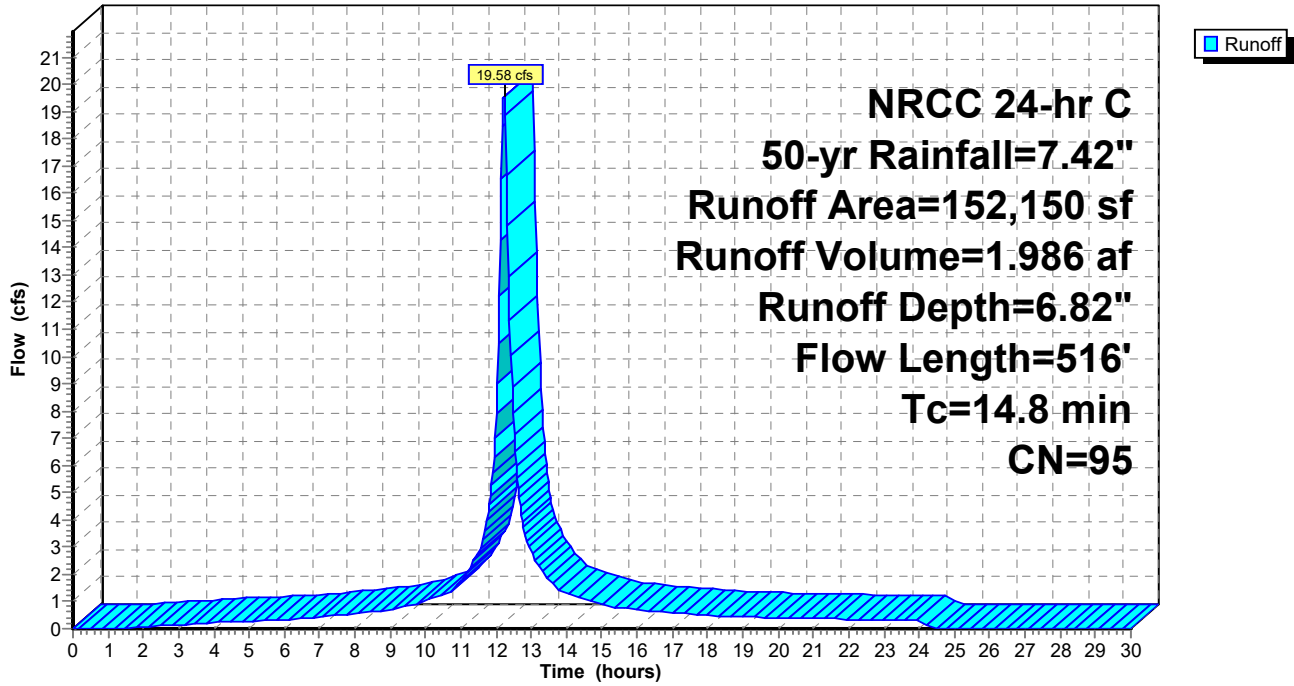
Existing Conditions
NRCC 24-hr C 50-yr Rainfall=7.42"

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Subcatchment EX-1: West-Parking & Building

Hydrograph



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Existing Conditions
 NRCC 24-hr C 50-yr Rainfall=7.42"
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Summary for Subcatchment EX-2: Front Lawn

Runoff = 2.58 cfs @ 12.18 hrs, Volume= 0.211 af, Depth= 5.20"
 Routed to Pond AP-2 : Front Lawn Landscaped Area

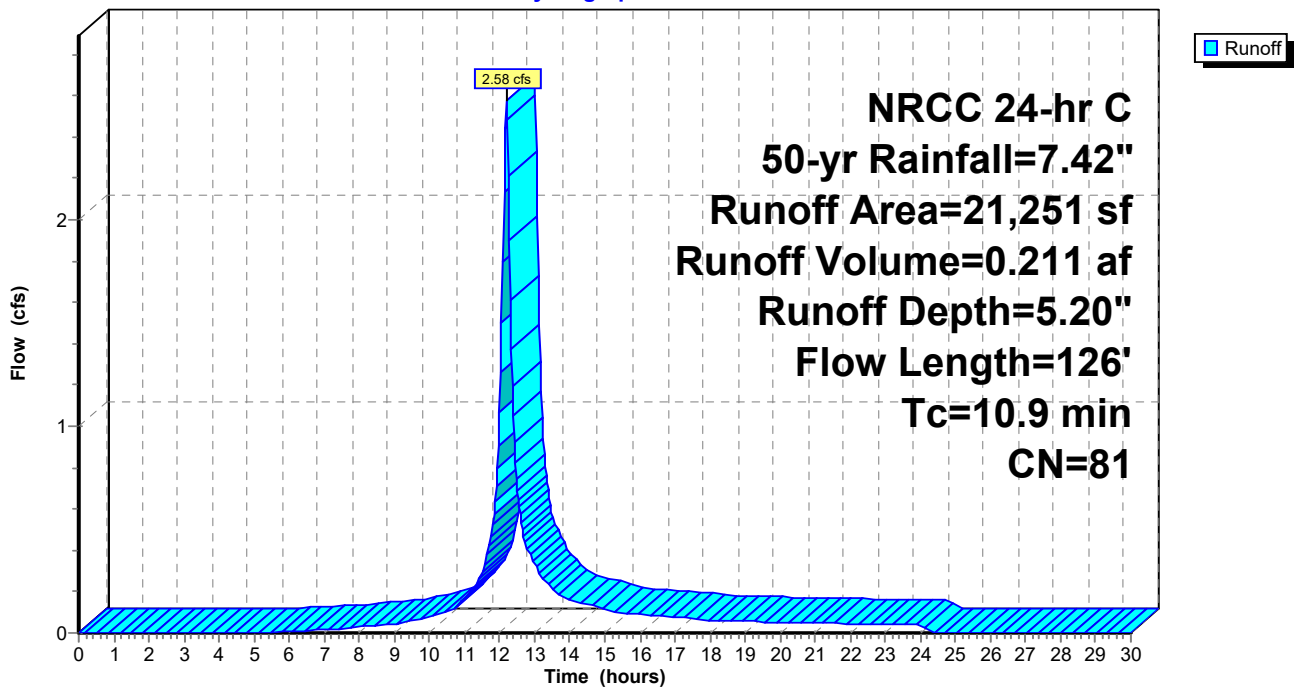
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

	Area (sf)	CN	Description
*	721	98	Concrete, HSG D
	19,154	80	>75% Grass cover, Good, HSG D
*	1,376	79	Landscaping, Good, HSG D
	21,251	81	Weighted Average
	20,530		96.61% Pervious Area
	721		3.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0150	0.16		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
0.4	26	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
10.9	126	Total			

Subcatchment EX-2: Front Lawn

Hydrograph



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Summary for Subcatchment EX-3: Entrance Drive

Runoff = 3.64 cfs @ 12.17 hrs, Volume= 0.308 af, Depth= 6.24"
 Routed to Pond AP-5 : DI#5

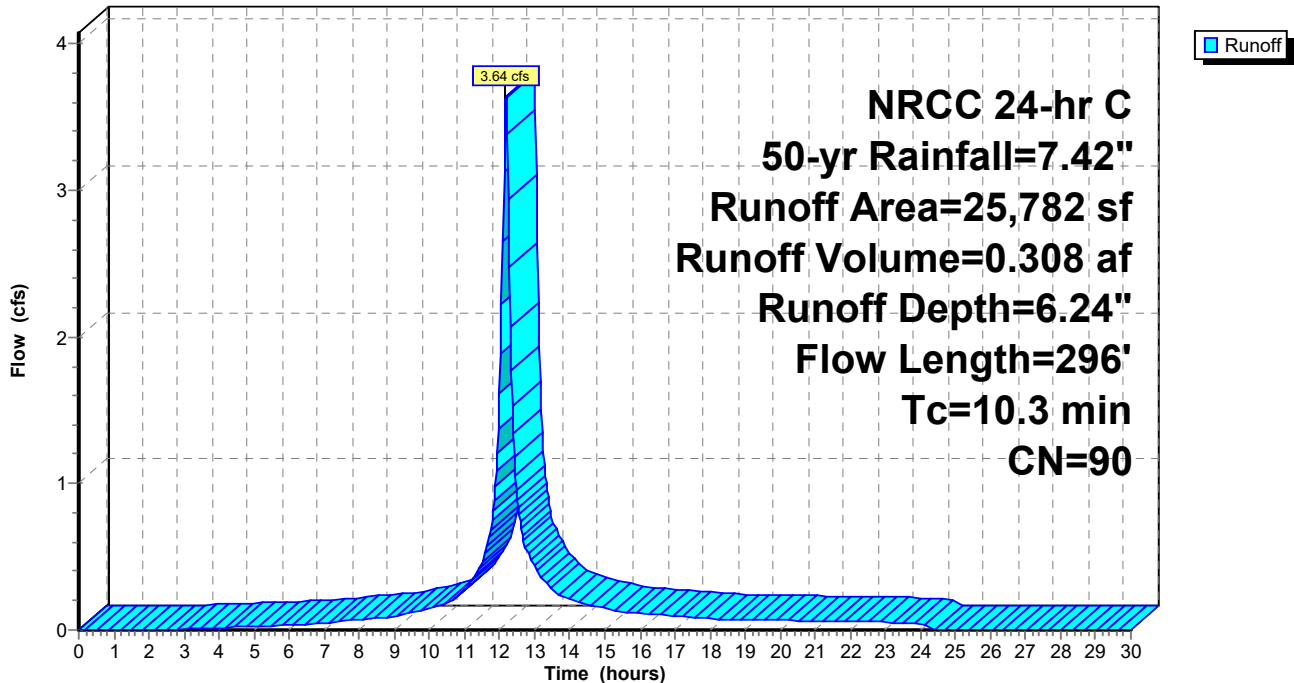
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
9,910	98	Paved parking, HSG D
* 814	98	Concrete, HSG D
3,130	98	Roofs, HSG D
9,334	80	>75% Grass cover, Good, HSG D
* 2,594	79	Landscaping, Good, HSG D
25,782	90	Weighted Average
11,928		46.26% Pervious Area
13,854		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	92	0.0200	0.18		Sheet Flow, A-B
1.6	204	0.0110	2.13		Grass: Short n= 0.150 P2= 3.53" Shallow Concentrated Flow, B-C
10.3	296	Total			Paved Kv= 20.3 fps

Subcatchment EX-3: Entrance Drive

Hydrograph



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Existing Conditions
NRCC 24-hr C 50-yr Rainfall=7.42"

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Summary for Subcatchment EX-4: Landscaped Area South of Entrance Drive

Runoff = 0.23 cfs @ 12.13 hrs, Volume= 0.016 af, Depth= 4.97"
Routed to Pond AP-4 : Landscaped Area

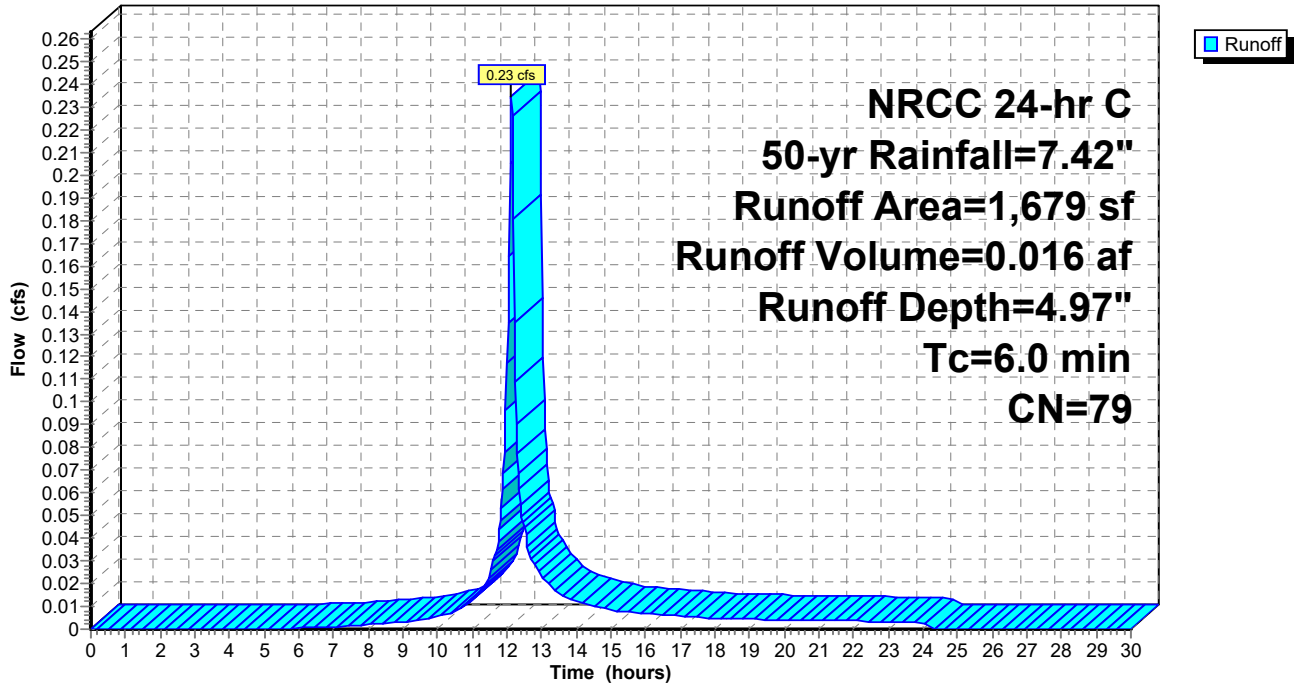
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
510	80	>75% Grass cover, Good, HSG D
* 1,169	79	Landscaping, Good, HSG D
1,679	79	Weighted Average
1,679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Minimum

Subcatchment EX-4: Landscaped Area South of Entrance Drive

Hydrograph



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Existing Conditions
NRCC 24-hr C 50-yr Rainfall=7.42"

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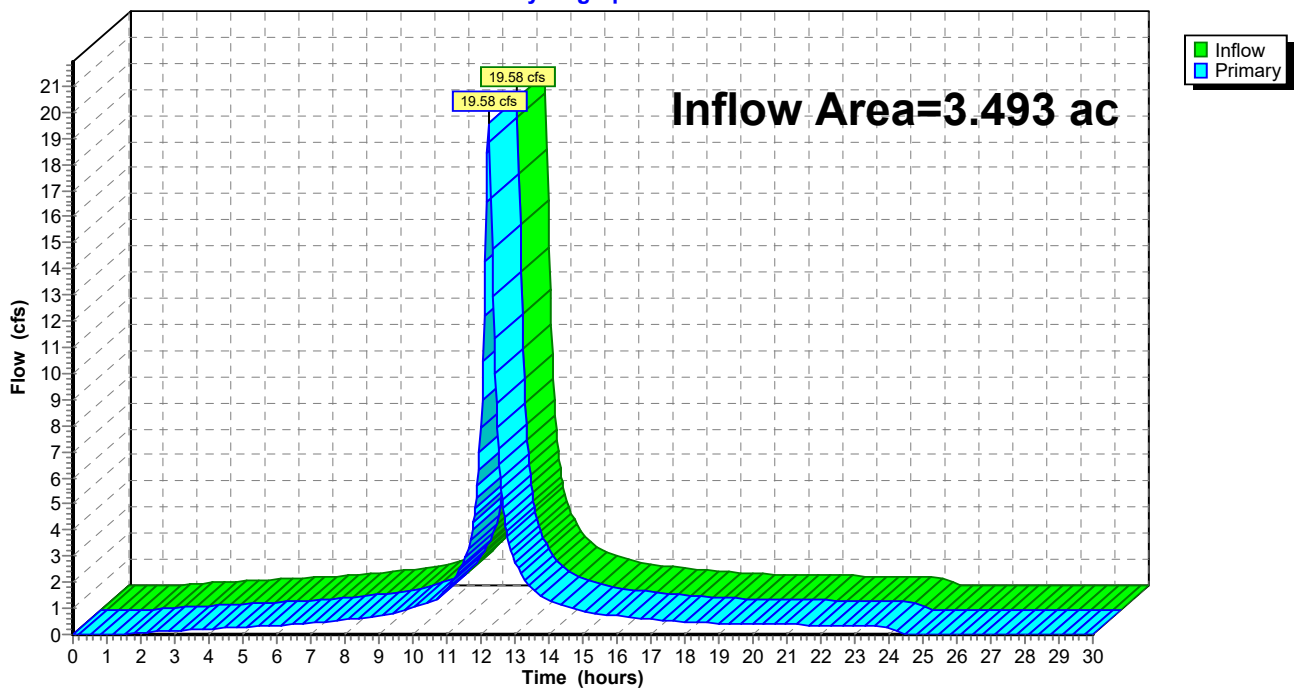
Summary for Pond AP-1: Norwalk River

Inflow Area = 3.493 ac, 82.84% Impervious, Inflow Depth = 6.82" for 50-yr event
Inflow = 19.58 cfs @ 12.22 hrs, Volume= 1.986 af
Primary = 19.58 cfs @ 12.22 hrs, Volume= 1.986 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



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Existing Conditions
NRCC 24-hr C 50-yr Rainfall=7.42"

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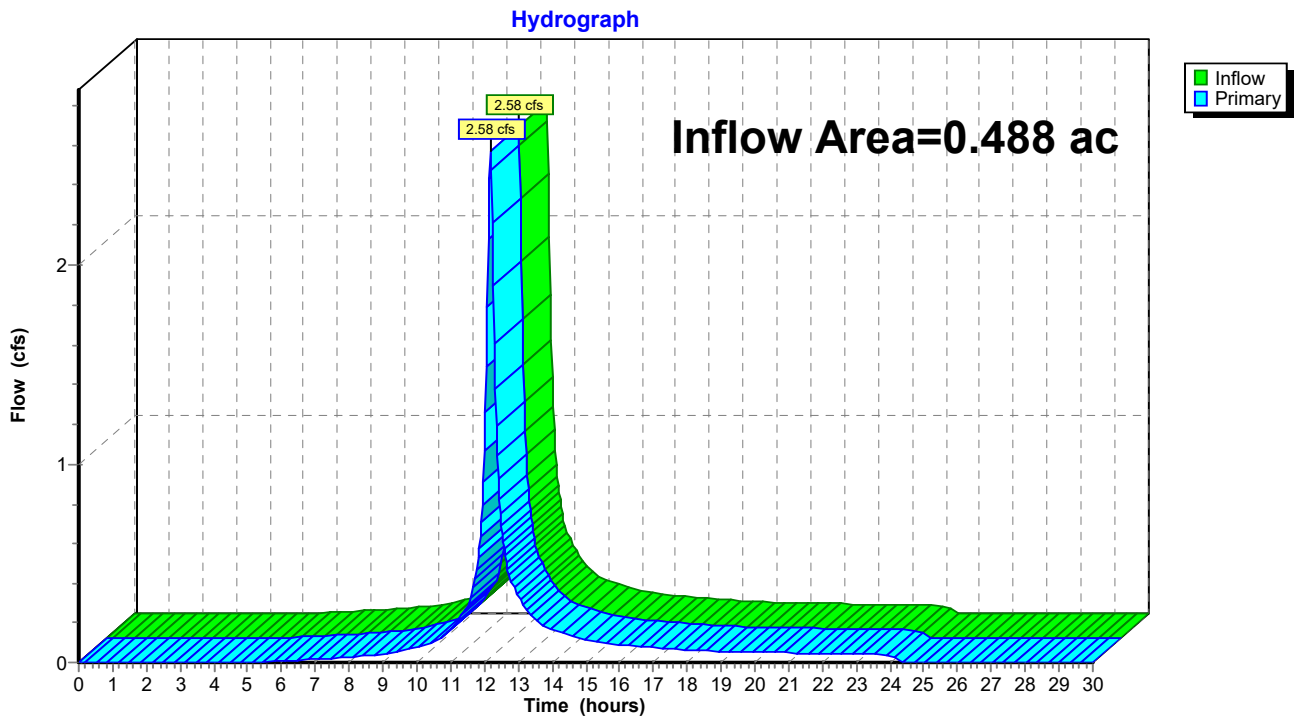
Page 36

Summary for Pond AP-2: Front Lawn Landscaped Area

Inflow Area = 0.488 ac, 3.39% Impervious, Inflow Depth = 5.20" for 50-yr event
Inflow = 2.58 cfs @ 12.18 hrs, Volume= 0.211 af
Primary = 2.58 cfs @ 12.18 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-2: Front Lawn Landscaped Area



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Existing Conditions
NRCC 24-hr C 50-yr Rainfall=7.42"

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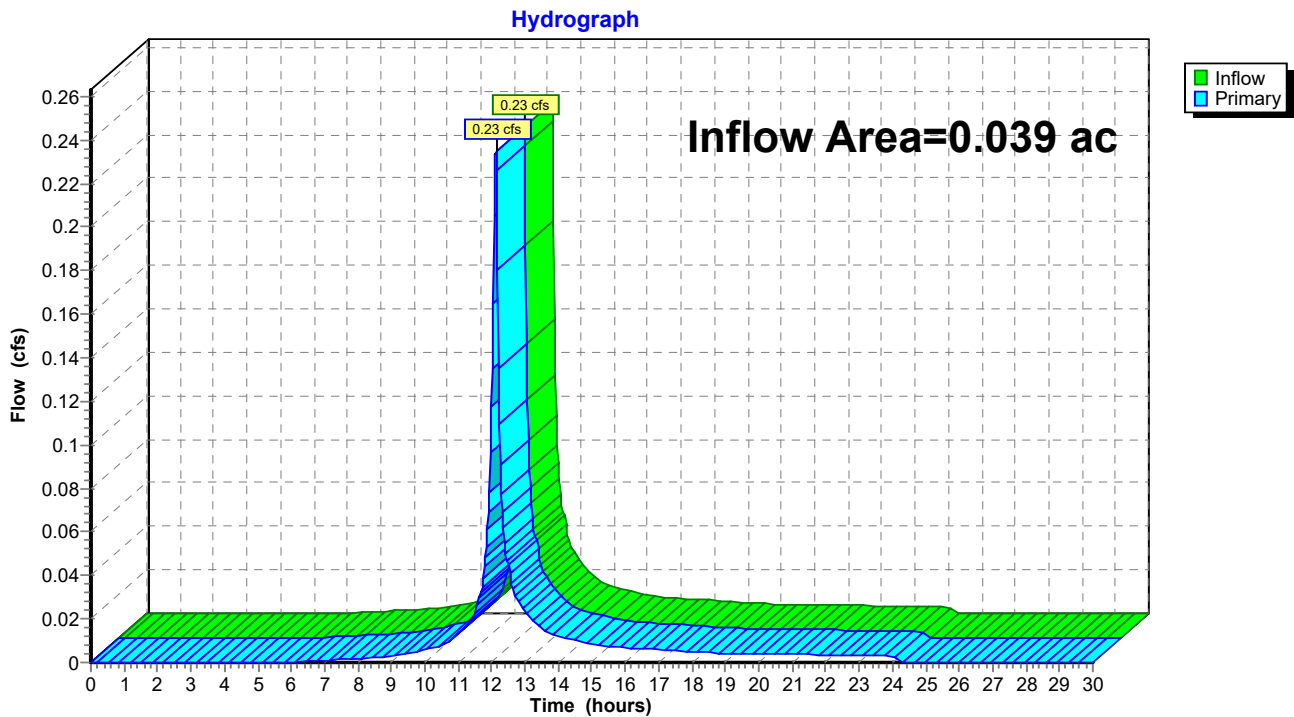
Page 37

Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.039 ac, 0.00% Impervious, Inflow Depth = 4.97" for 50-yr event
Inflow = 0.23 cfs @ 12.13 hrs, Volume= 0.016 af
Primary = 0.23 cfs @ 12.13 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Existing Conditions
NRCC 24-hr C 50-yr Rainfall=7.42"

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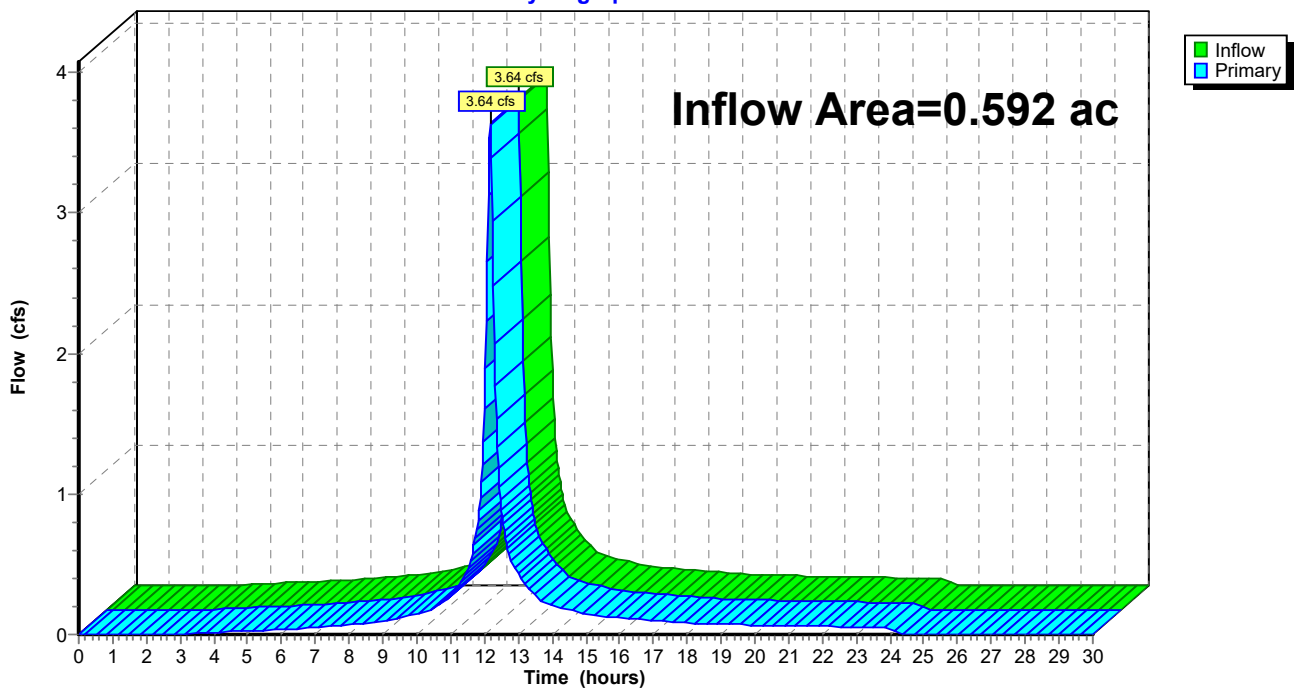
Summary for Pond AP-5: DI#5

Inflow Area = 0.592 ac, 53.74% Impervious, Inflow Depth = 6.24" for 50-yr event
Inflow = 3.64 cfs @ 12.17 hrs, Volume= 0.308 af
Primary = 3.64 cfs @ 12.17 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-5: DI#5

Hydrograph



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Existing Conditions

NRCC 24-hr C 100-yr Rainfall=8.35"

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Summary for Subcatchment EX-1: West-Parking & Building

Runoff = 22.11 cfs @ 12.22 hrs, Volume= 2.256 af, Depth= 7.75"
 Routed to Pond AP-1 : Norwalk River

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
67,673	98	Paved parking, HSG D
18,349	98	Paved parking, HSG C
* 1,675	98	Concrete, HSG D
38,351	98	Roofs, HSG D
17,092	80	>75% Grass cover, Good, HSG D
* 144	79	Landscaping., Good, HSG D
8,301	77	Woods, Good, HSG D
565	70	Woods, Good, HSG C
152,150	95	Weighted Average
26,102		17.16% Pervious Area
126,048		82.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0270	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
5.5	275	0.0140	0.83		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.8	119	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	22	0.2270	2.38		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
14.8	516	Total			

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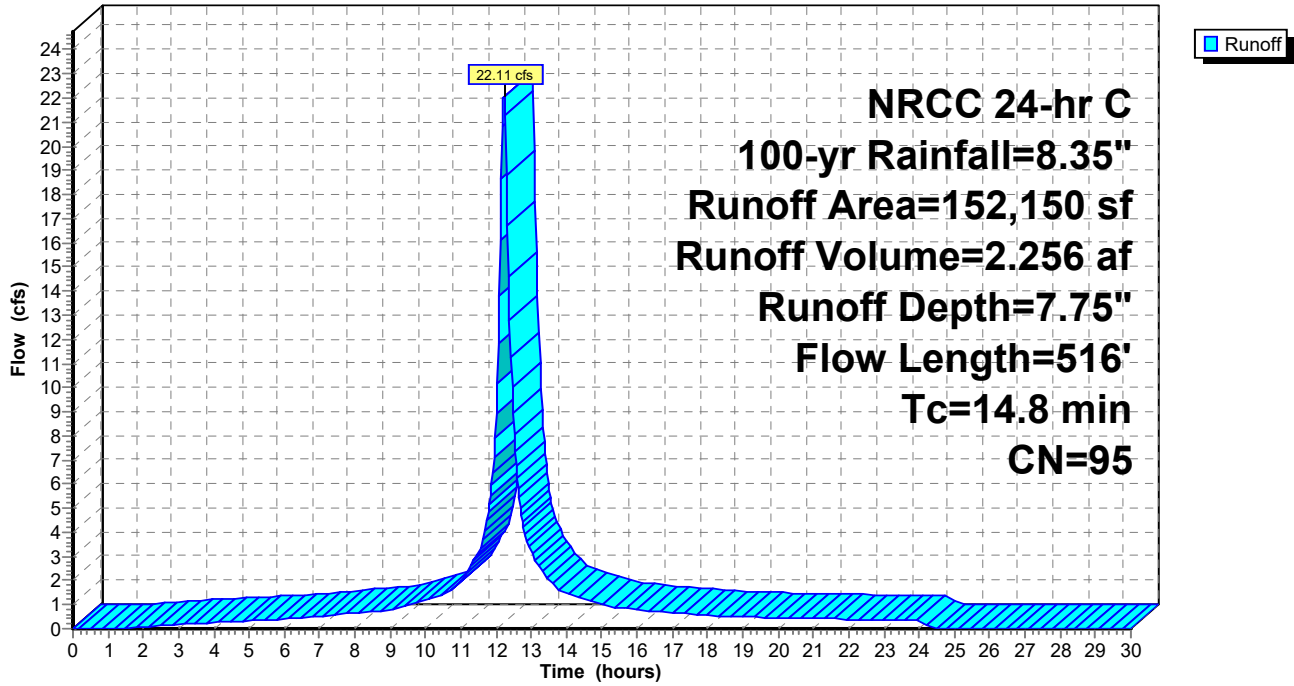
Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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Subcatchment EX-1: West-Parking & Building

Hydrograph



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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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Summary for Subcatchment EX-2: Front Lawn

Runoff = 2.99 cfs @ 12.18 hrs, Volume= 0.247 af, Depth= 6.07"
Routed to Pond AP-2 : Front Lawn Landscaped Area

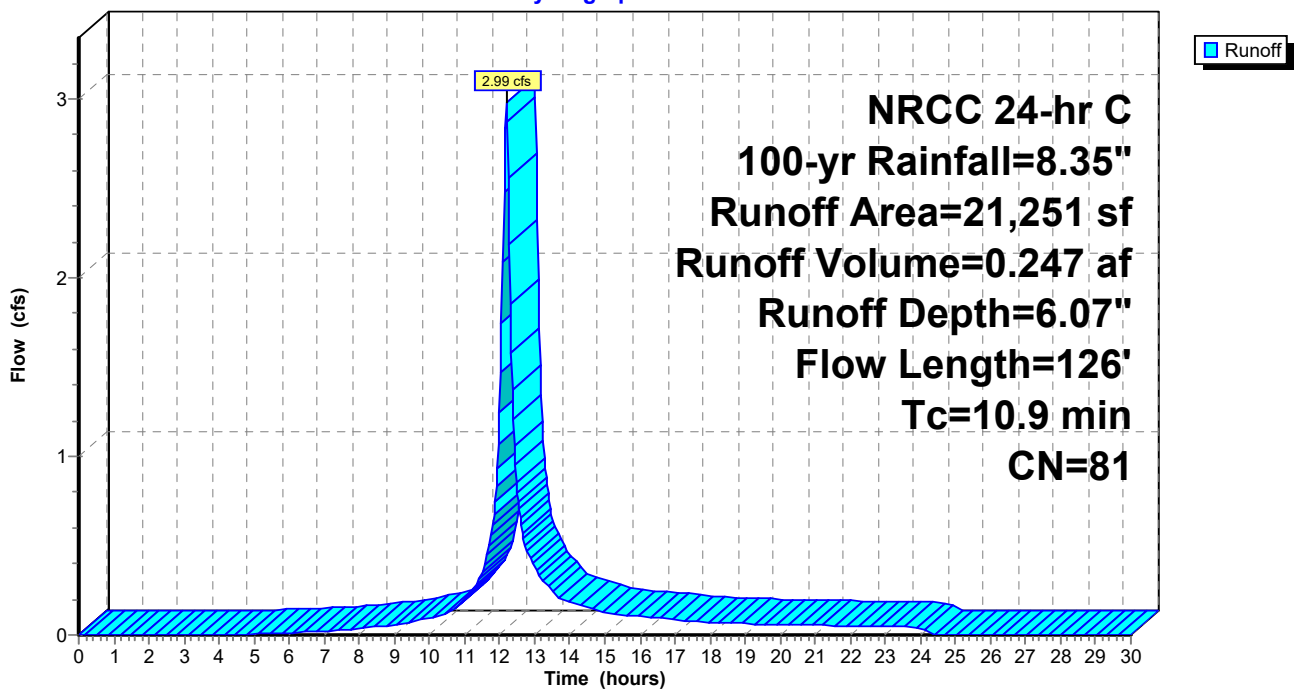
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
* 721	98	Concrete, HSG D
19,154	80	>75% Grass cover, Good, HSG D
* 1,376	79	Landscaping, Good, HSG D
21,251	81	Weighted Average
20,530		96.61% Pervious Area
721		3.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0150	0.16		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.53"
0.4	26	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
10.9	126	Total			

Subcatchment EX-2: Front Lawn

Hydrograph



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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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Summary for Subcatchment EX-3: Entrance Drive

Runoff = 4.14 cfs @ 12.17 hrs, Volume= 0.353 af, Depth= 7.15"
Routed to Pond AP-5 : DI#5

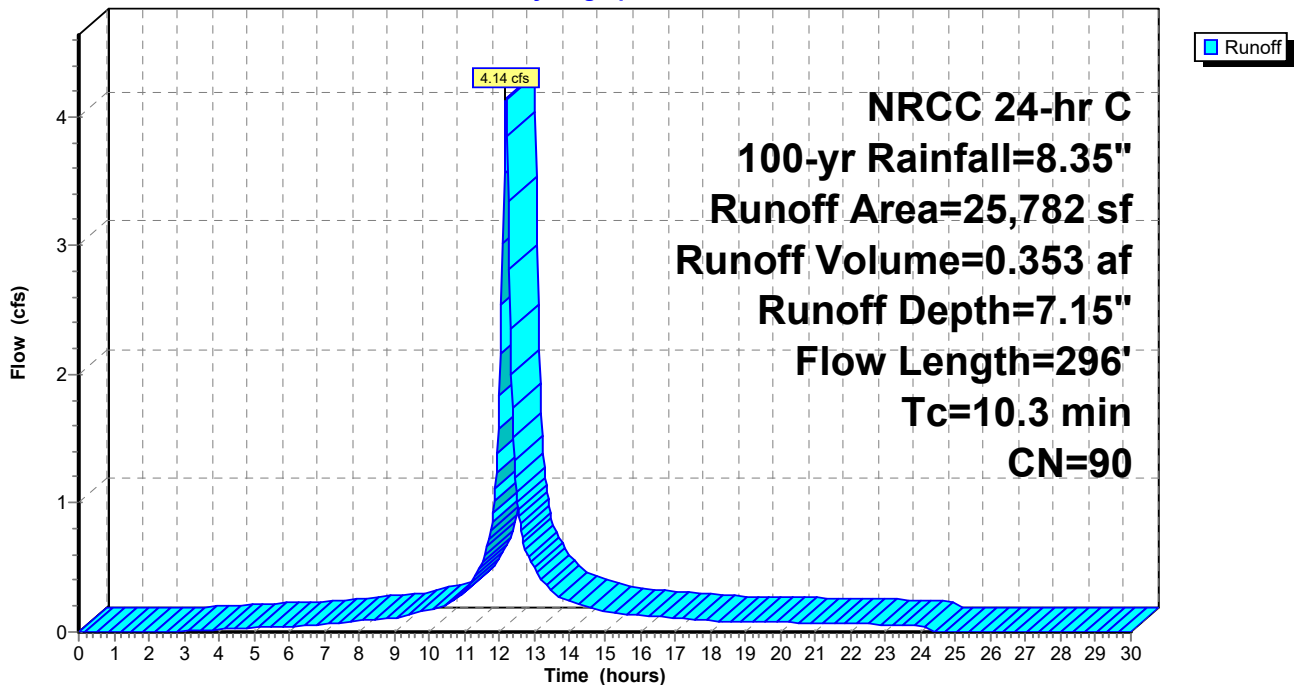
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
9,910	98	Paved parking, HSG D
* 814	98	Concrete, HSG D
3,130	98	Roofs, HSG D
9,334	80	>75% Grass cover, Good, HSG D
* 2,594	79	Landscaping, Good, HSG D
25,782	90	Weighted Average
11,928		46.26% Pervious Area
13,854		53.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	92	0.0200	0.18		Sheet Flow, A-B
1.6	204	0.0110	2.13		Grass: Short n= 0.150 P2= 3.53" Shallow Concentrated Flow, B-C
10.3	296	Total			Paved Kv= 20.3 fps

Subcatchment EX-3: Entrance Drive

Hydrograph



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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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Summary for Subcatchment EX-4: Landscaped Area South of Entrance Drive

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 0.019 af, Depth= 5.83"
Routed to Pond AP-4 : Landscaped Area

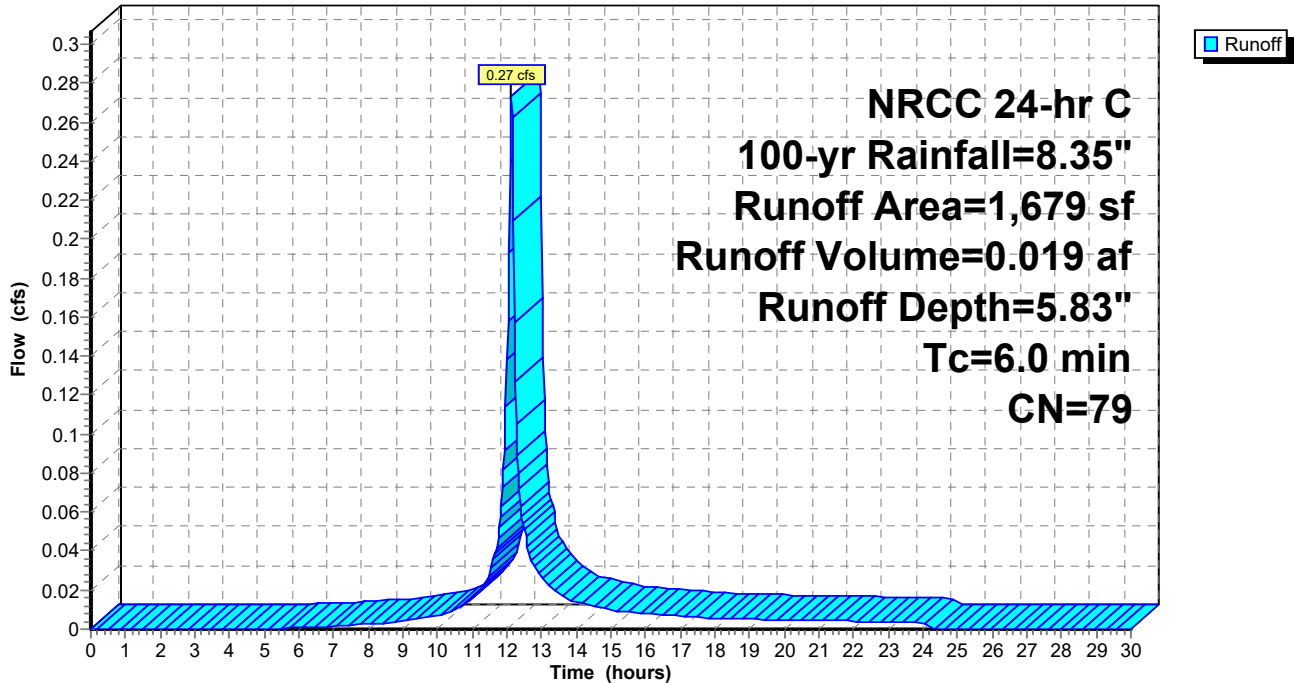
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
510	80	>75% Grass cover, Good, HSG D
* 1,169	79	Landscaping, Good, HSG D
1,679	79	Weighted Average
1,679		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Minimum

Subcatchment EX-4: Landscaped Area South of Entrance Drive

Hydrograph



AMSW_Existing

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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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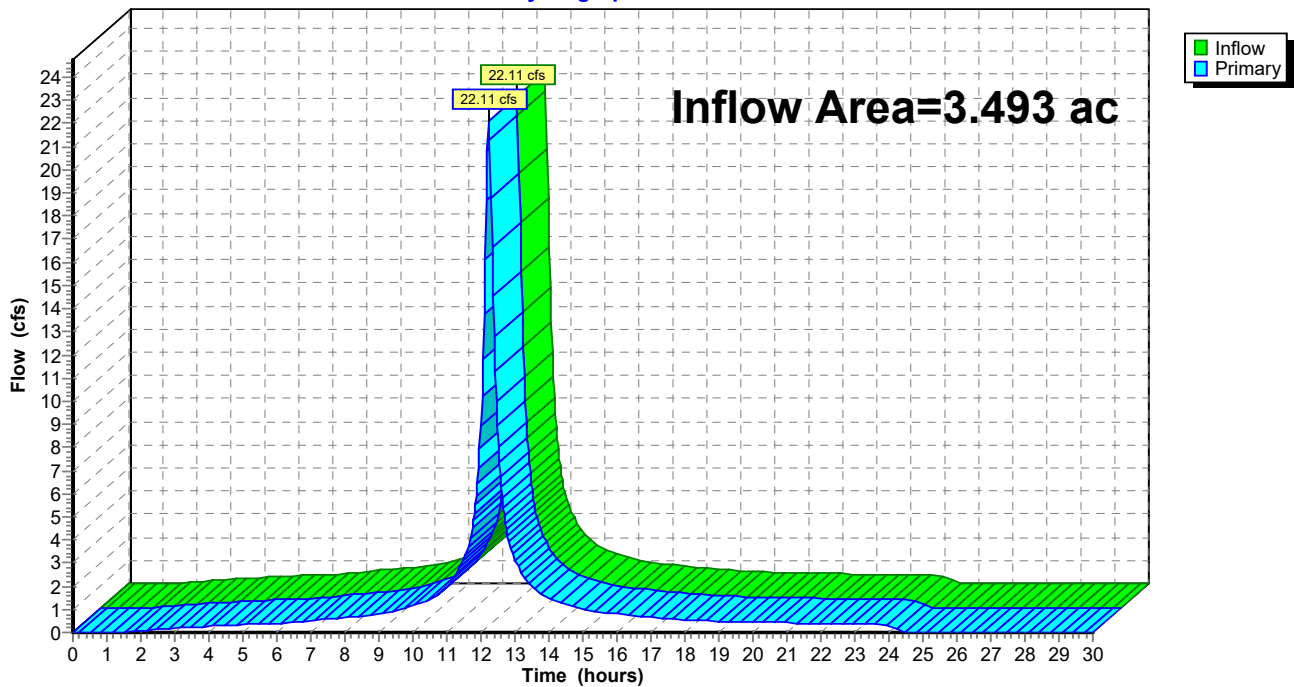
Summary for Pond AP-1: Norwalk River

Inflow Area = 3.493 ac, 82.84% Impervious, Inflow Depth = 7.75" for 100-yr event
Inflow = 22.11 cfs @ 12.22 hrs, Volume= 2.256 af
Primary = 22.11 cfs @ 12.22 hrs, Volume= 2.256 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



AMSW_Existing

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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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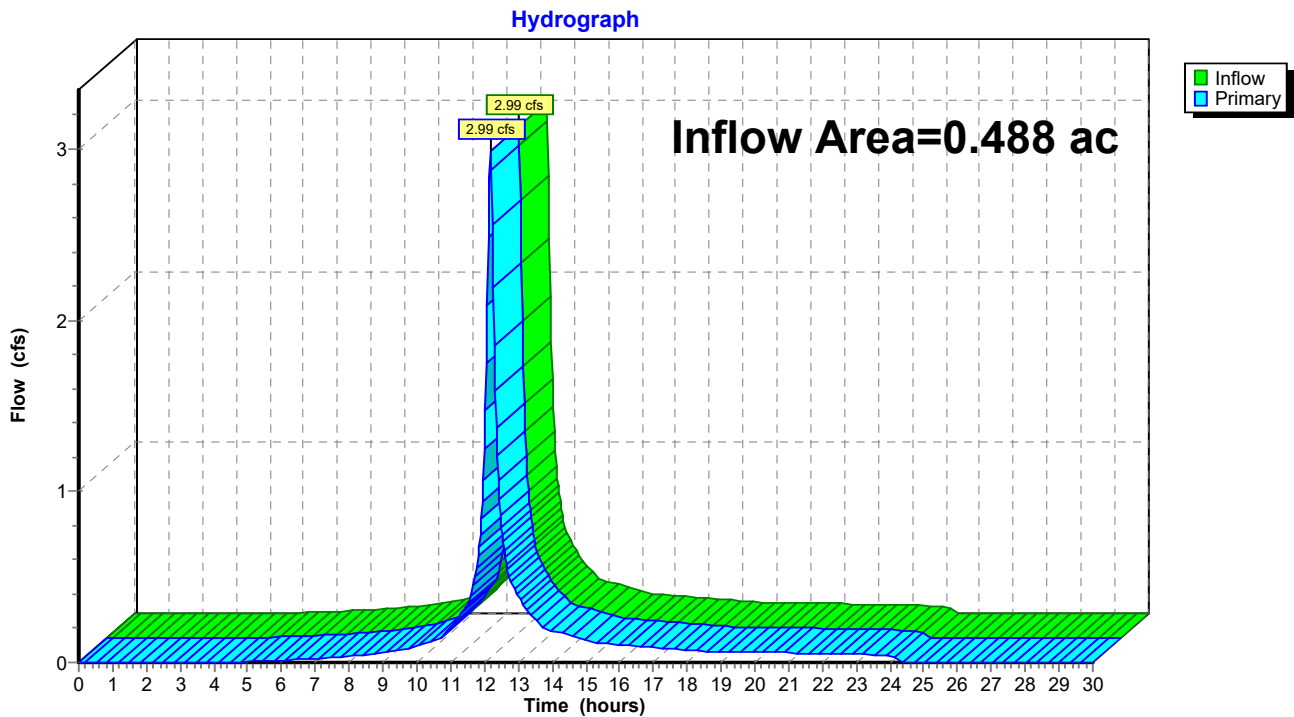
Page 45

Summary for Pond AP-2: Front Lawn Landscaped Area

Inflow Area = 0.488 ac, 3.39% Impervious, Inflow Depth = 6.07" for 100-yr event
Inflow = 2.99 cfs @ 12.18 hrs, Volume= 0.247 af
Primary = 2.99 cfs @ 12.18 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-2: Front Lawn Landscaped Area



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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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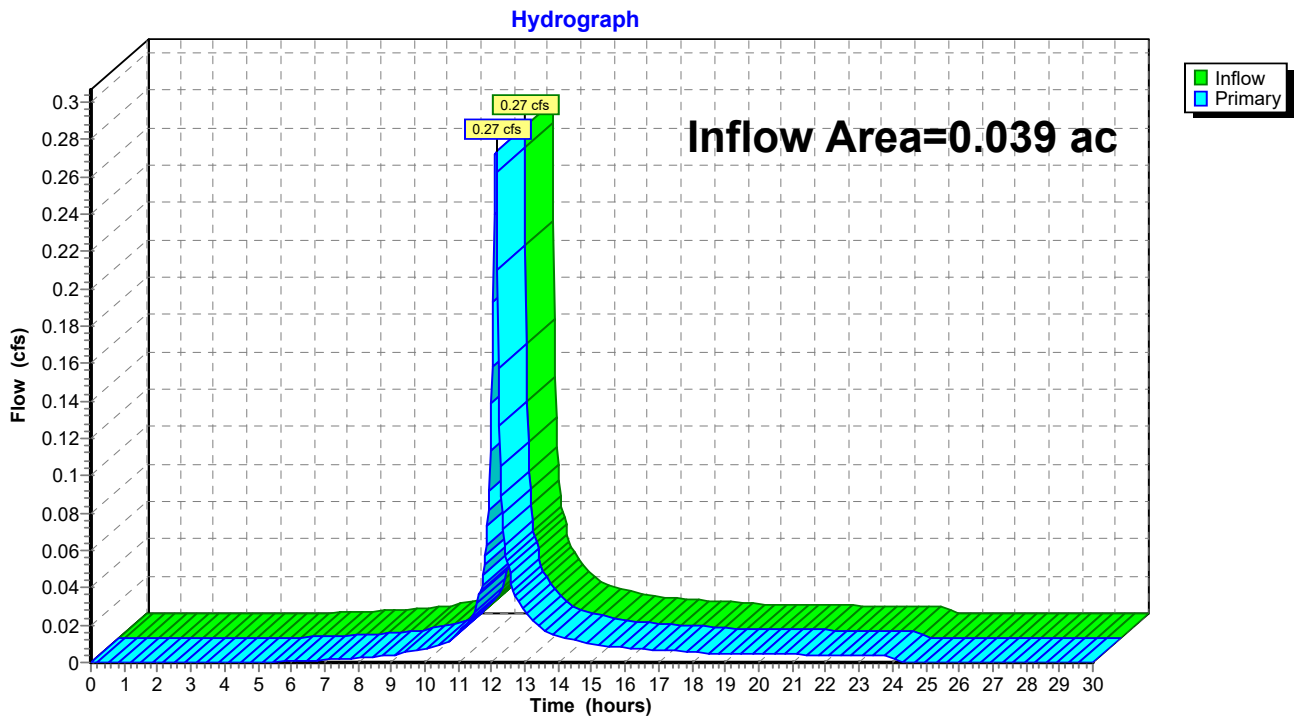
Page 46

Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.039 ac, 0.00% Impervious, Inflow Depth = 5.83" for 100-yr event
Inflow = 0.27 cfs @ 12.13 hrs, Volume= 0.019 af
Primary = 0.27 cfs @ 12.13 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Existing Conditions
NRCC 24-hr C 100-yr Rainfall=8.35"

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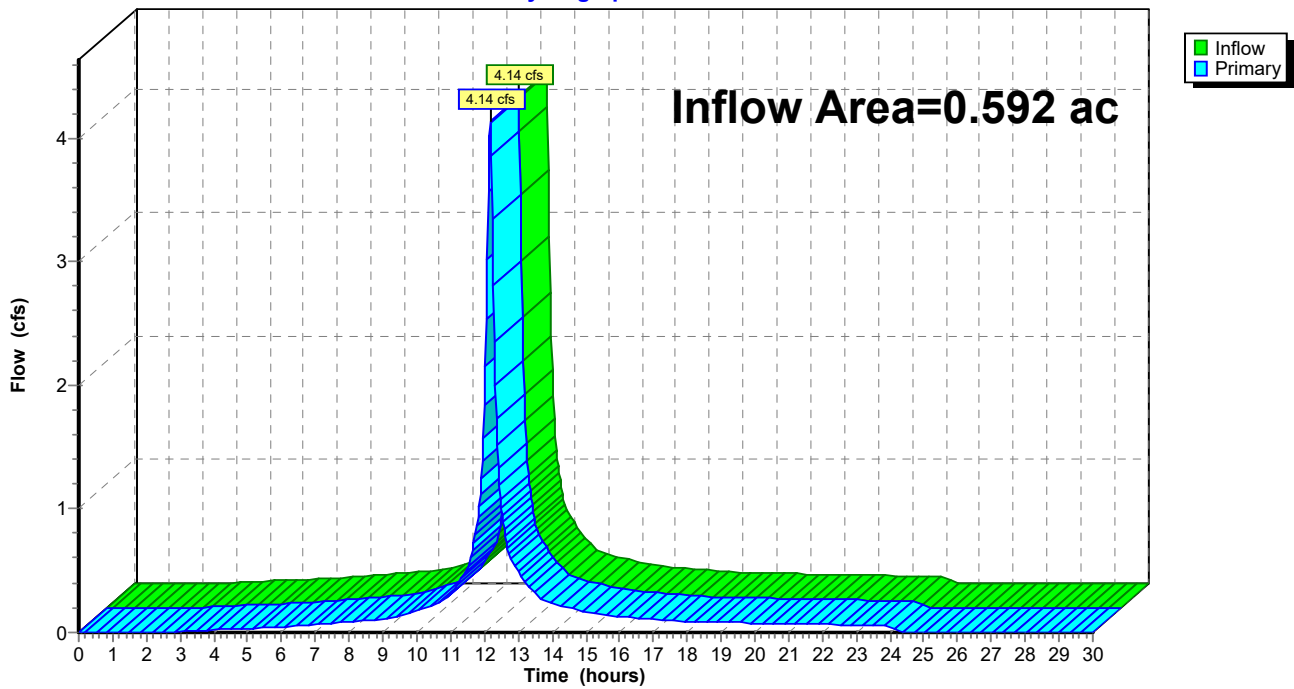
Summary for Pond AP-5: DI#5

Inflow Area = 0.592 ac, 53.74% Impervious, Inflow Depth = 7.15" for 100-yr event
Inflow = 4.14 cfs @ 12.17 hrs, Volume= 0.353 af
Primary = 4.14 cfs @ 12.17 hrs, Volume= 0.353 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-5: DI#5

Hydrograph





Appendix G

Hydrologic Analysis - Proposed Conditions

Proposed Multifamily Development

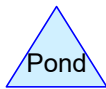
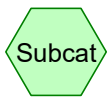
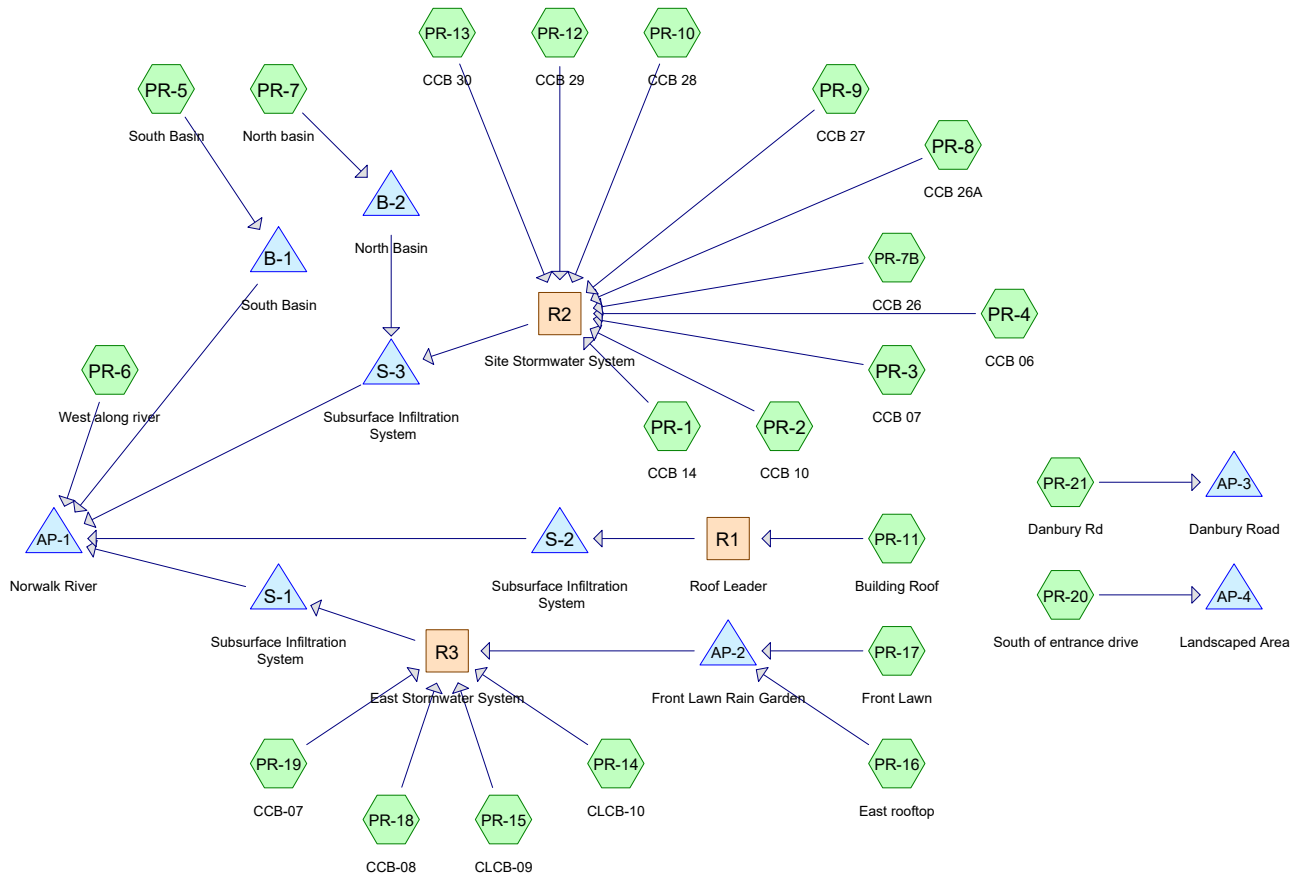
131 Danbury Road, Wilton, Connecticut
Drainage Report

Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023





Routing Diagram for AMSW_Proposed-R5, Revised 2023-11-02
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Page 2

Summary for Subcatchment PR-1: CCB 14

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 3.18"
Routed to Reach R2 : Site Stormwater System

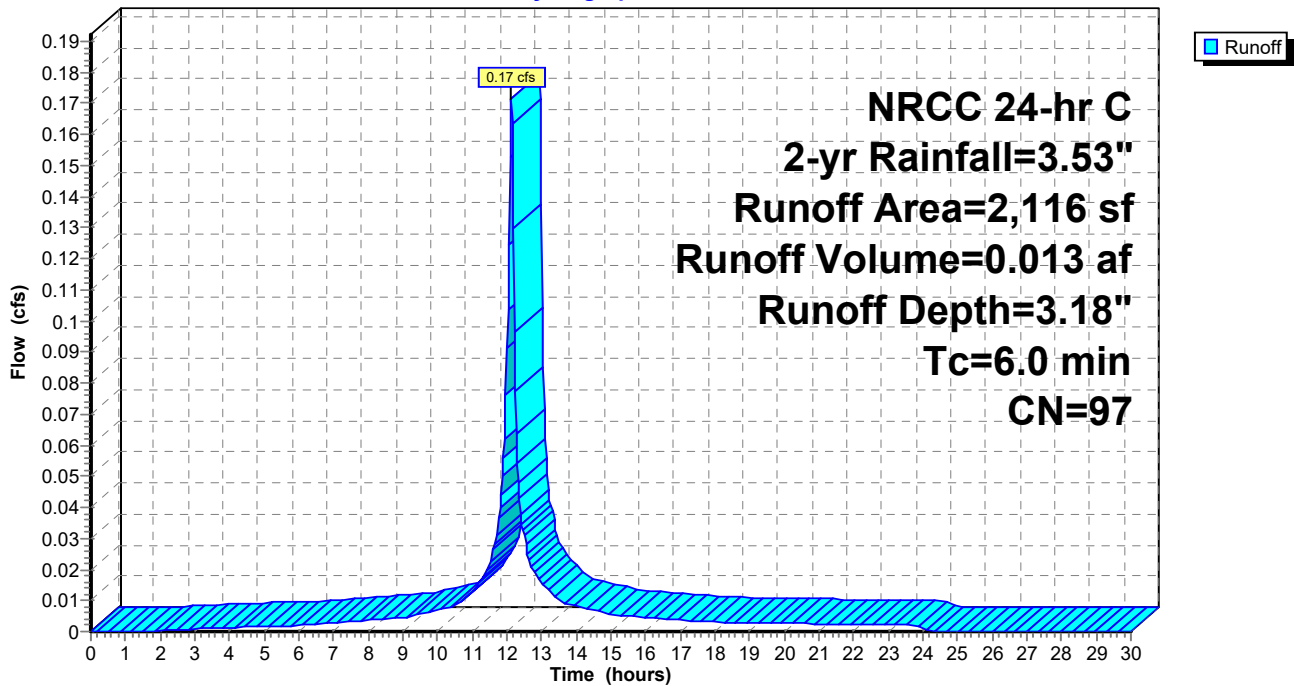
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
2,045	98	Paved parking, HSG D
* 71	79	Landscaping, Good, HSG D
2,116	97	Weighted Average
71		3.36% Pervious Area
2,045		96.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-1: CCB 14

Hydrograph



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Page 3

Summary for Subcatchment PR-10: CCB 28

Runoff = 0.71 cfs @ 12.13 hrs, Volume= 0.052 af, Depth= 2.97"
Routed to Reach R2 : Site Stormwater System

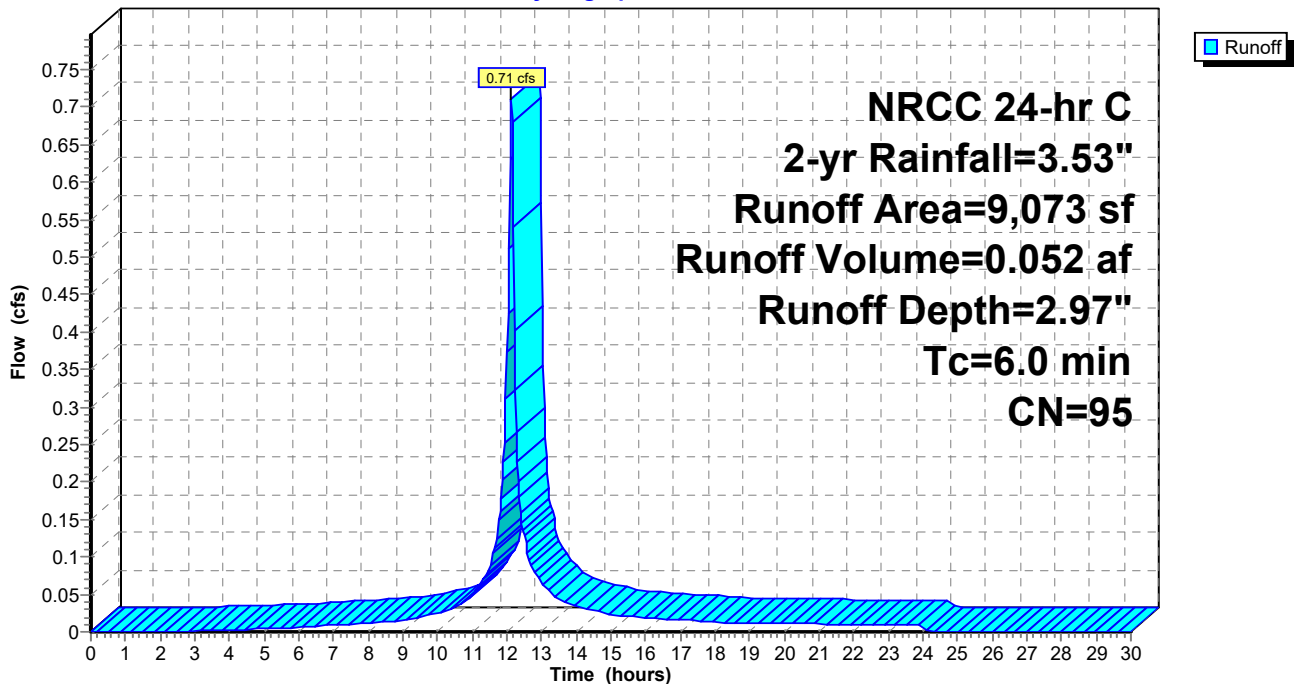
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
7,450	98	Paved parking, HSG D
440	80	>75% Grass cover, Good, HSG D
* 1,183	79	Landscaping, Good, HSG D
9,073	95	Weighted Average
1,623		17.89% Pervious Area
7,450		82.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-10: CCB 28

Hydrograph



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Summary for Subcatchment PR-11: Building Roof

Runoff = 6.57 cfs @ 12.13 hrs, Volume= 0.505 af, Depth= 3.30"
Routed to Reach R1 : Roof Leader

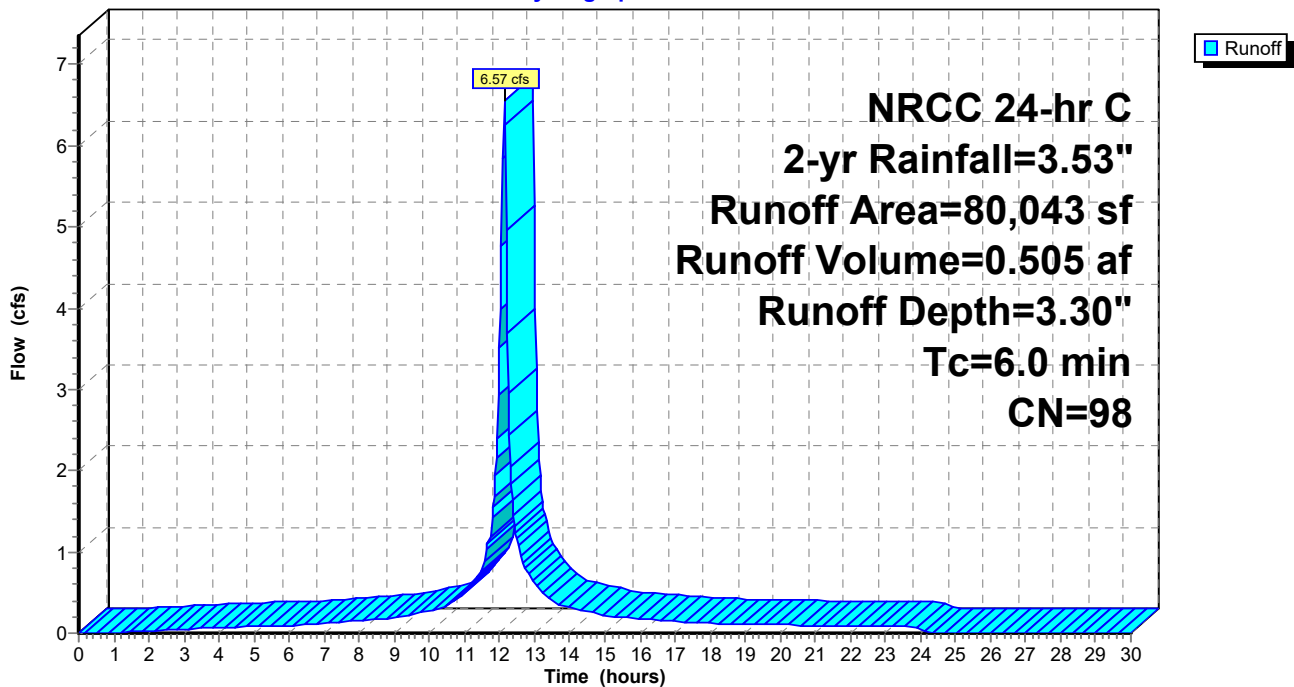
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
80,043	98	Roofs, HSG D
80,043		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-11: Building Roof

Hydrograph



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Summary for Subcatchment PR-12: CCB 29

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.006 af, Depth= 3.30"
Routed to Reach R2 : Site Stormwater System

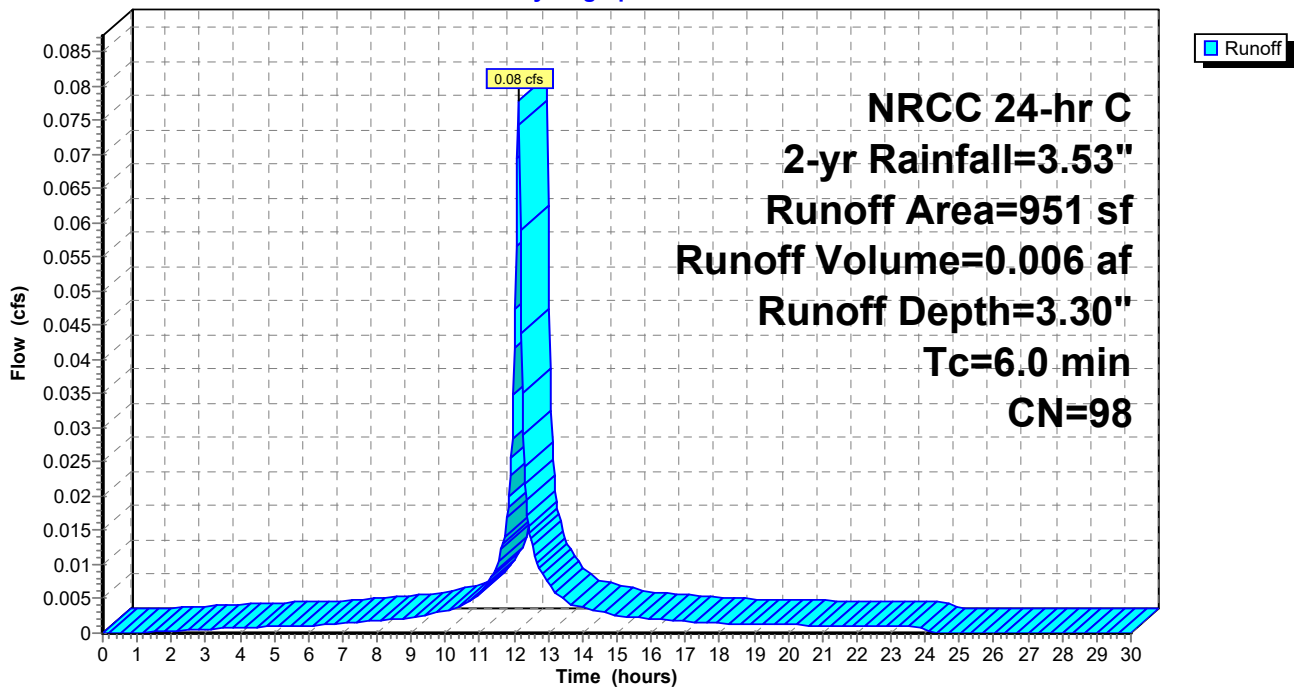
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
951	98	Paved parking, HSG D
951		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-12: CCB 29

Hydrograph



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Summary for Subcatchment PR-13: CCB 30

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.006 af, Depth= 3.30"
Routed to Reach R2 : Site Stormwater System

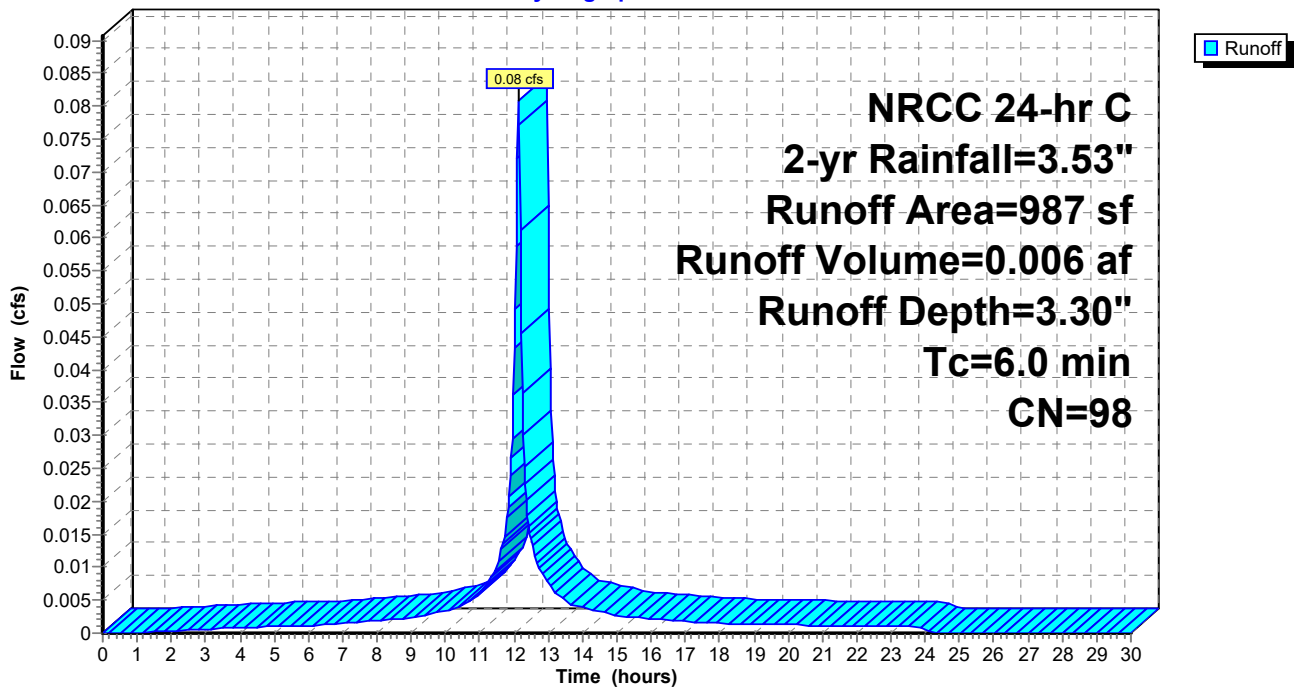
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
987	98	Paved parking, HSG D
987		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-13: CCB 30

Hydrograph



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Summary for Subcatchment PR-14: CLCB-10

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 3.07"
Routed to Reach R3 : East Stormwater System

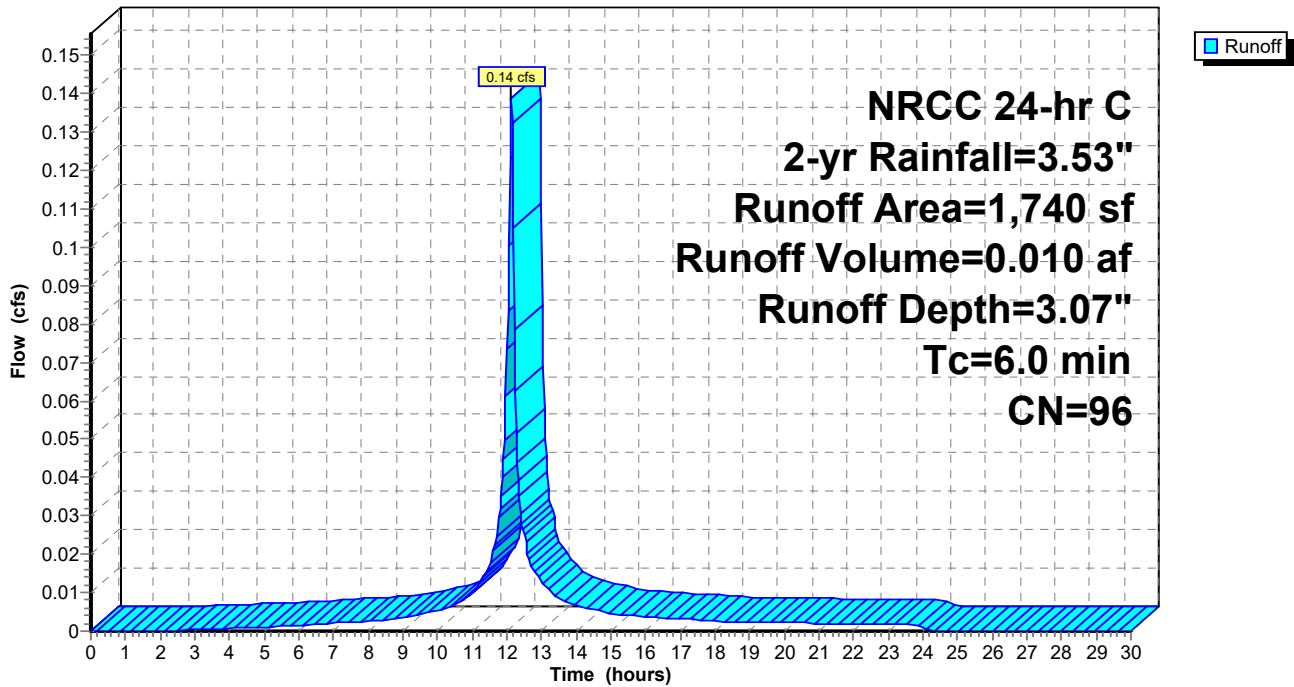
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
* 1,740	96	Concrete paver, HSG D
1,740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-14: CLCB-10

Hydrograph



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Summary for Subcatchment PR-15: CLCB-09

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 3.07"
Routed to Reach R3 : East Stormwater System

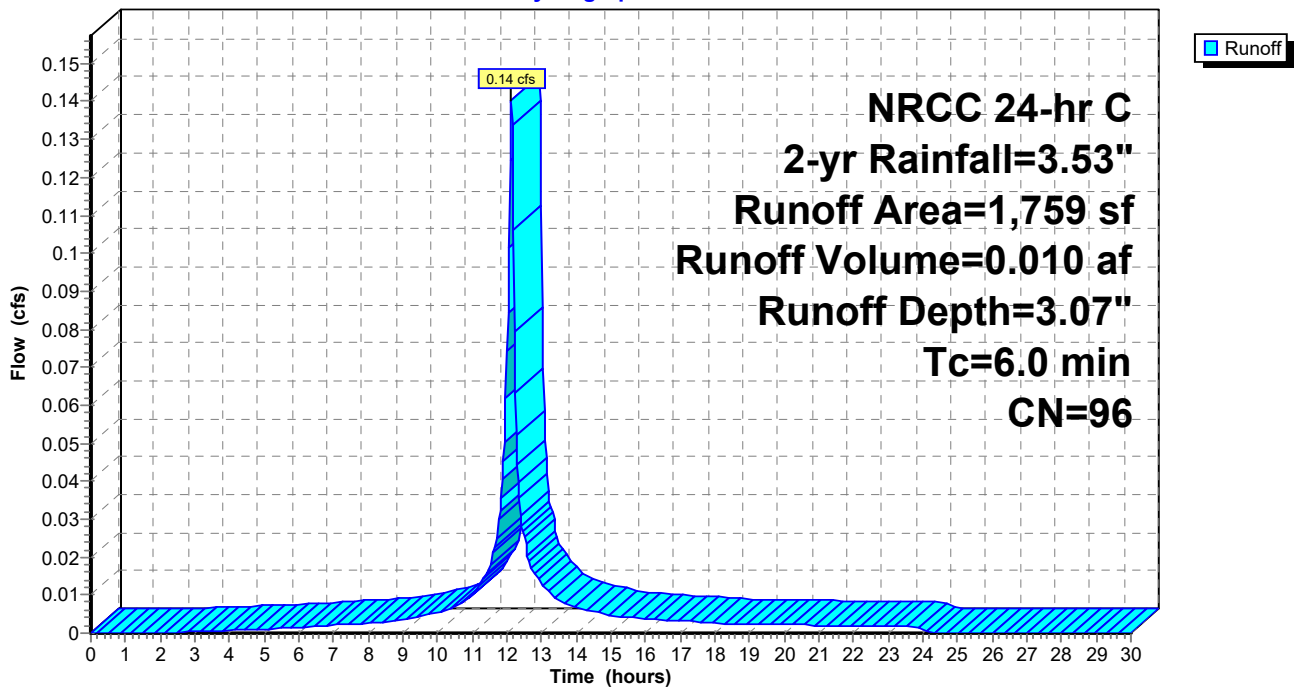
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
* 1,759	96	Pevious paver, HSG D
1,759		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-15: CLCB-09

Hydrograph



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Summary for Subcatchment PR-16: East rooftop

Runoff = 0.26 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 3.30"
Routed to Pond AP-2 : Front Lawn Rain Garden

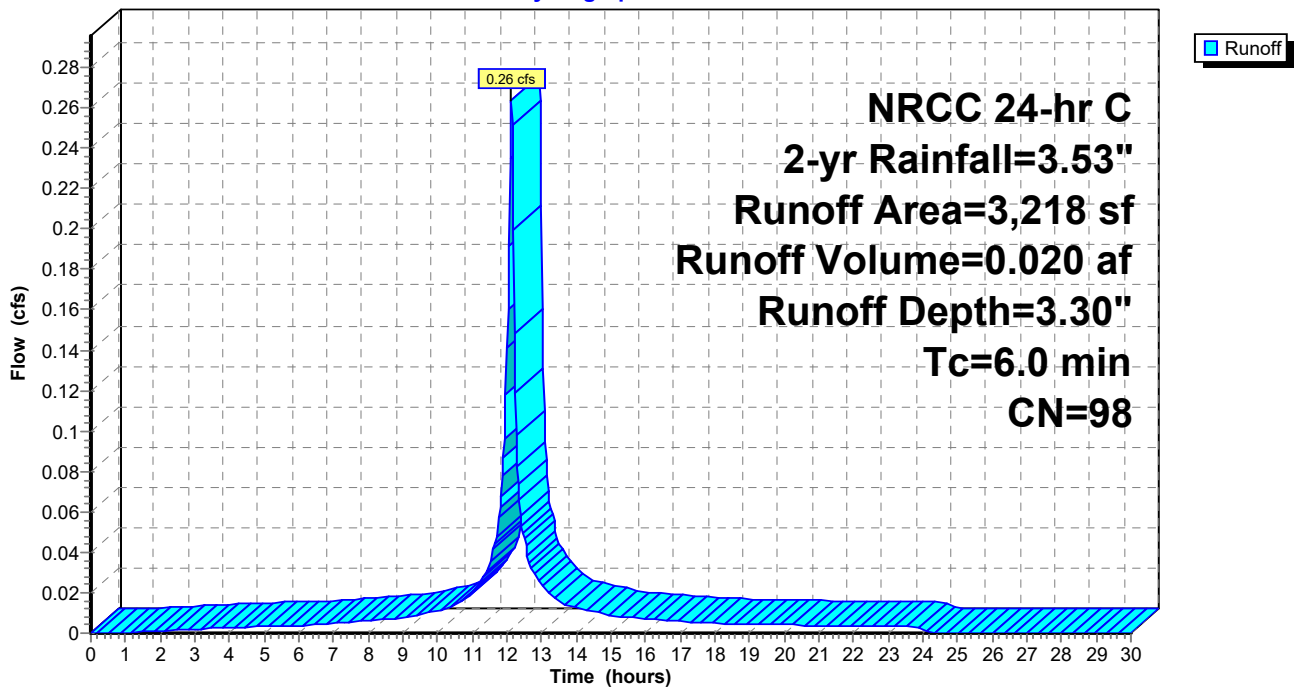
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
3,218	98	Roofs, HSG D
3,218		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-16: East rooftop

Hydrograph



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 Page 10

Summary for Subcatchment PR-17: Front Lawn

Runoff = 0.87 cfs @ 12.13 hrs, Volume= 0.058 af, Depth= 1.73"
 Routed to Pond AP-2 : Front Lawn Rain Garden

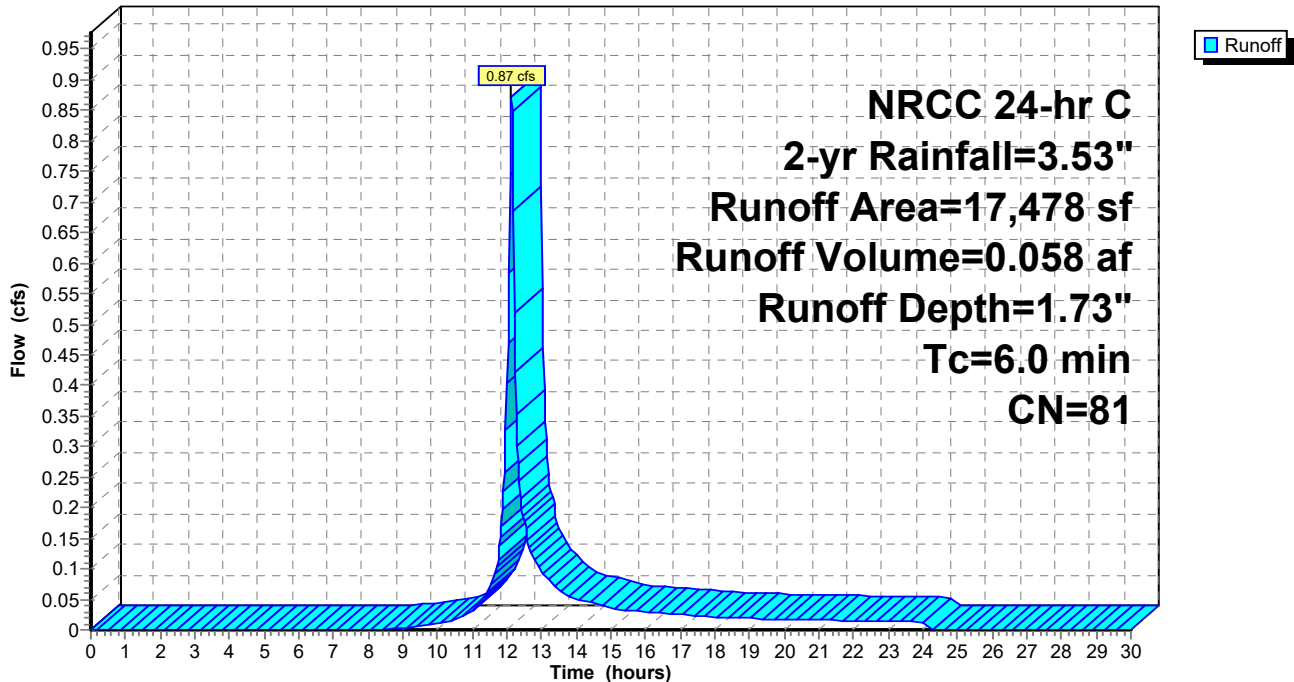
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
1,883	98	Paved parking, HSG D
6,950	80	>75% Grass cover, Good, HSG D
* 8,645	79	Landscaping, Good, HSG D
17,478	81	Weighted Average
15,595		89.23% Pervious Area
1,883		10.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-17: Front Lawn

Hydrograph



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 Page 11

Summary for Subcatchment PR-18: CCB-08

Runoff = 0.20 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 2.30"
 Routed to Reach R3 : East Stormwater System

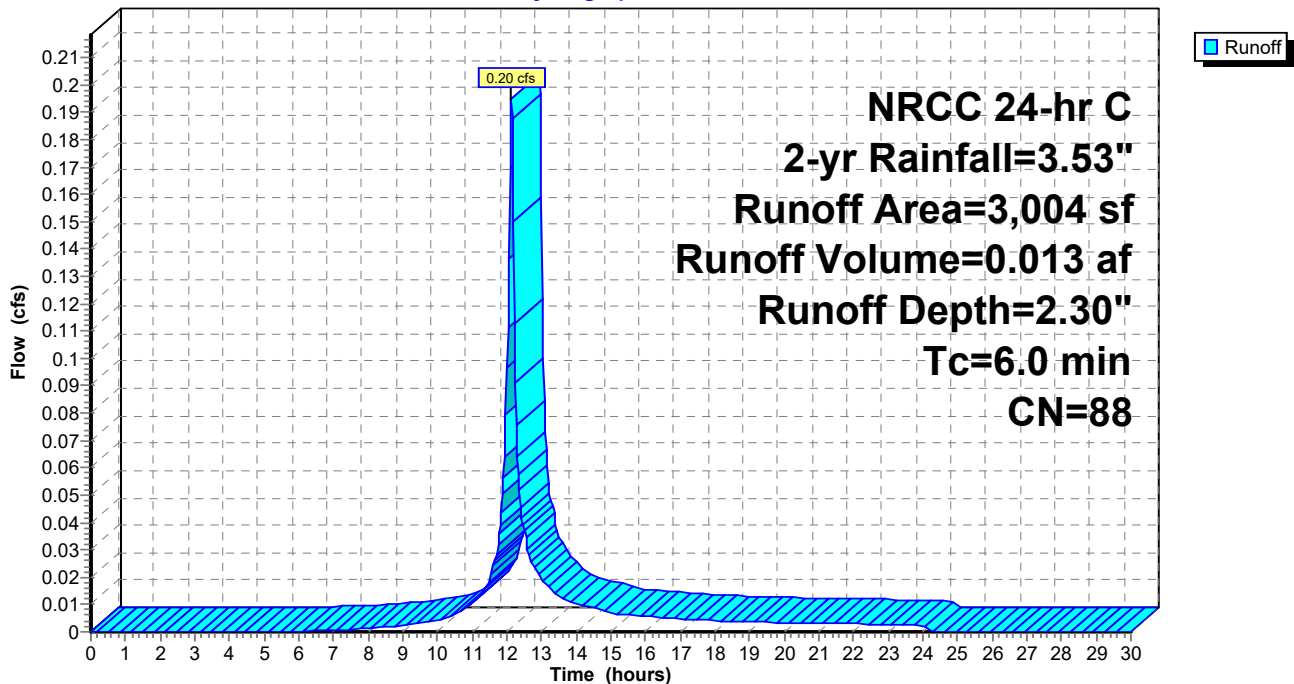
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
1,482	98	Paved parking, HSG D
192	80	>75% Grass cover, Good, HSG D
* 1,330	79	Landscaping, Good, HSG D
3,004	88	Weighted Average
1,522		50.67% Pervious Area
1,482		49.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-18: CCB-08

Hydrograph



AMSW_Proposed-R5

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Summary for Subcatchment PR-19: CCB-07

Runoff = 0.09 cfs @ 12.13 hrs, Volume= 0.007 af, Depth= 3.30"
Routed to Reach R3 : East Stormwater System

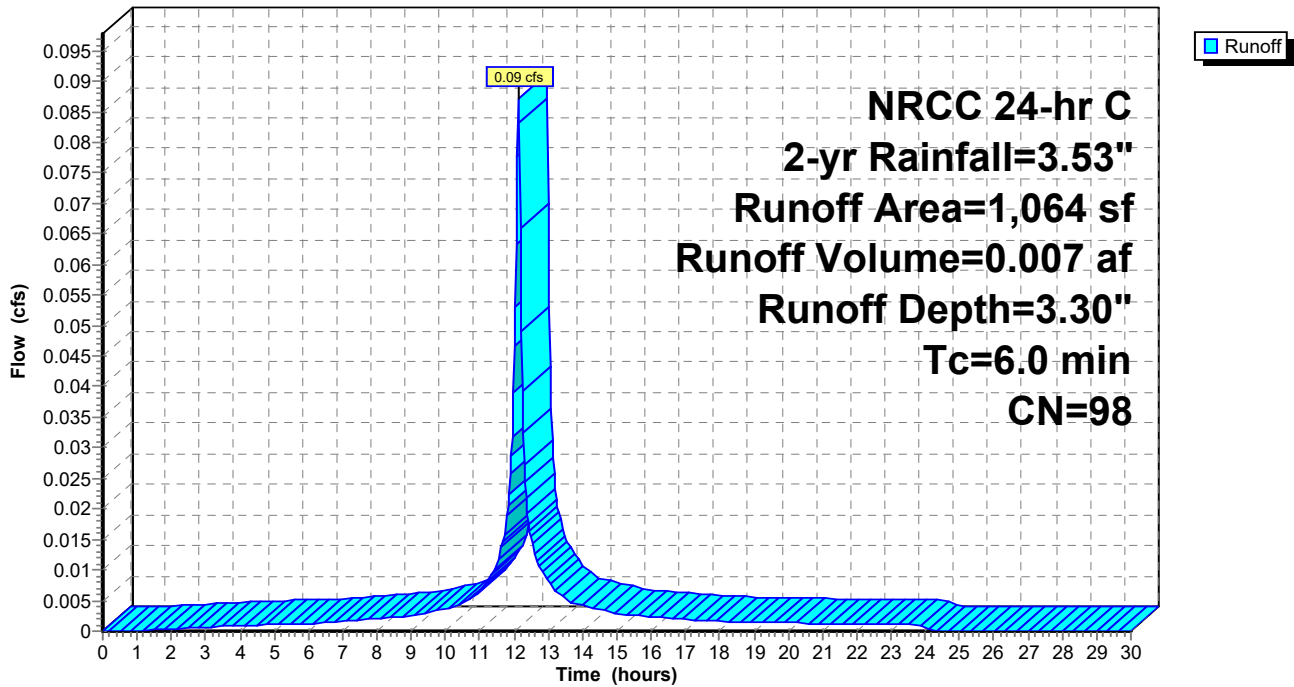
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
1,064	98	Paved parking, HSG D
1,064		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-19: CCB-07

Hydrograph



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Summary for Subcatchment PR-2: CCB 10

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.045 af, Depth= 2.67"
Routed to Reach R2 : Site Stormwater System

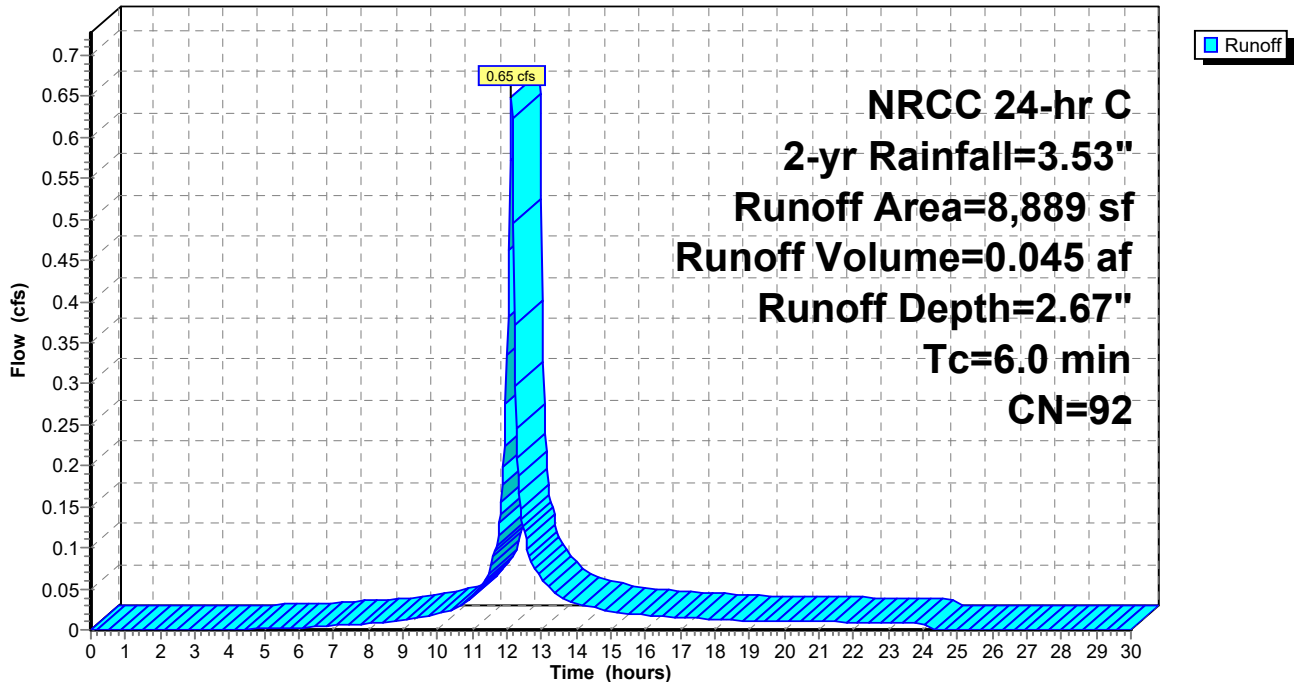
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

	Area (sf)	CN	Description
*	6,733	98	Paved parking, HSG C
*	1,772	72	Landscaping, Good, HSG C
	384	74	>75% Grass cover, Good, HSG C
	8,889	92	Weighted Average
	2,156		24.25% Pervious Area
	6,733		75.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-2: CCB 10

Hydrograph



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Summary for Subcatchment PR-20: South of entrance drive

Runoff = 0.29 cfs @ 12.13 hrs, Volume= 0.019 af, Depth= 1.59"
 Routed to Pond AP-4 : Landscaped Area

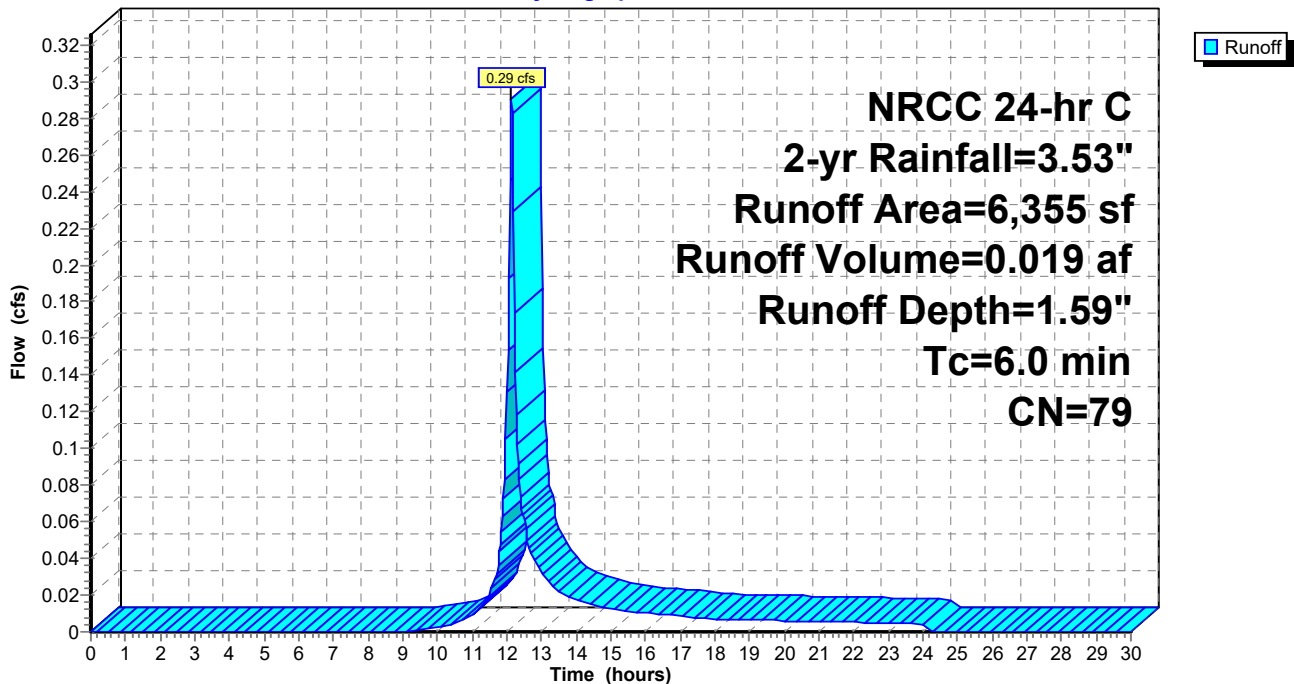
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
93	98	Paved parking, HSG D
755	80	>75% Grass cover, Good, HSG D
* 5,507	79	Landscaping, Good, HSG D
6,355	79	Weighted Average
6,262		98.54% Pervious Area
93		1.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-20: South of entrance drive

Hydrograph



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Summary for Subcatchment PR-21: Danbury Rd

Runoff = 0.09 cfs @ 12.13 hrs, Volume= 0.007 af, Depth= 3.30"
Routed to Pond AP-3 : Danbury Road

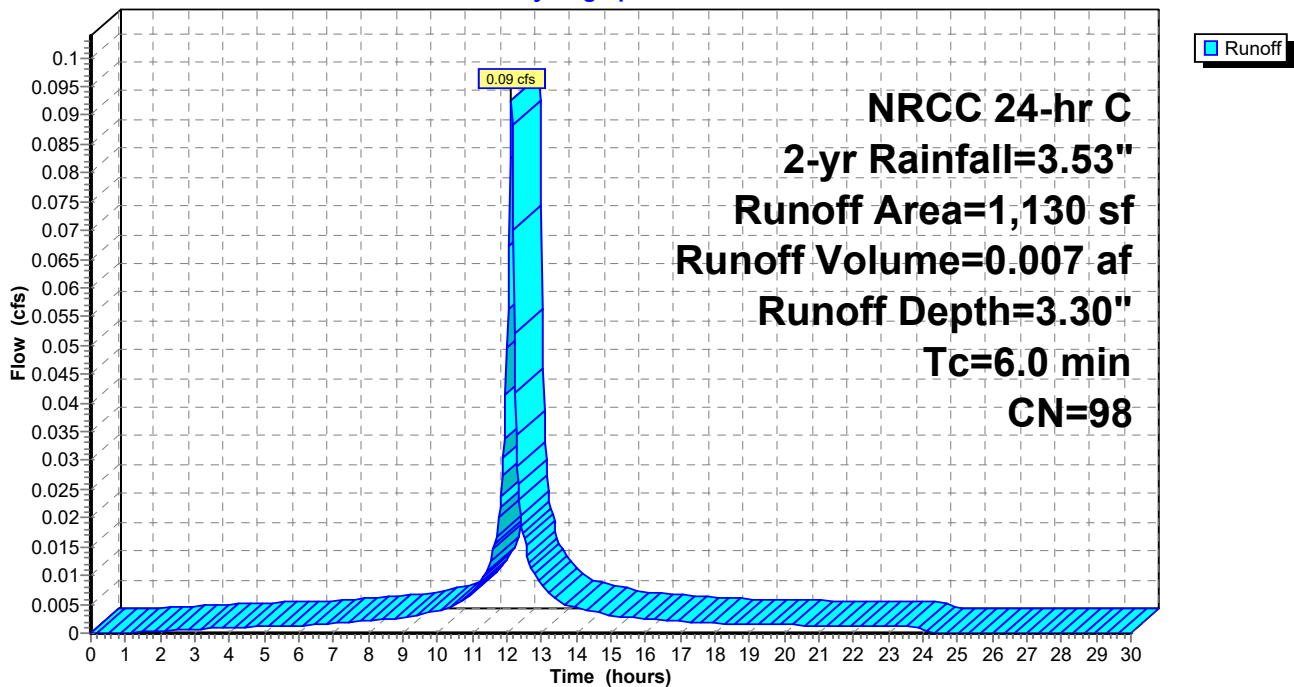
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
1,130	98	Paved parking, HSG D
1,130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-21: Danbury Rd

Hydrograph



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Summary for Subcatchment PR-3: CCB 07

Runoff = 0.41 cfs @ 12.13 hrs, Volume= 0.030 af, Depth= 3.07"
Routed to Reach R2 : Site Stormwater System

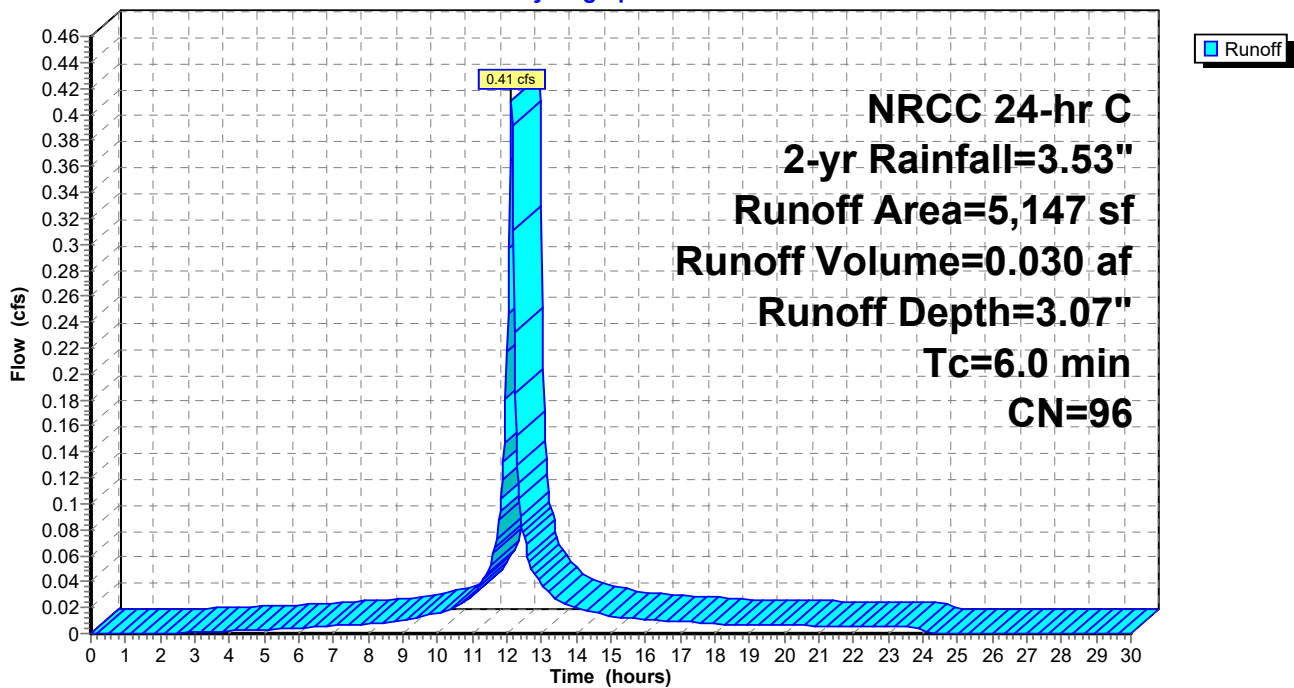
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

	Area (sf)	CN	Description
*	4,715	98	Paved parking, HSG C
*	432	72	Landscaping, Good, HSG C
	5,147	96	Weighted Average
	432		8.39% Pervious Area
	4,715		91.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-3: CCB 07

Hydrograph



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Summary for Subcatchment PR-4: CCB 06

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 3.18"
Routed to Reach R2 : Site Stormwater System

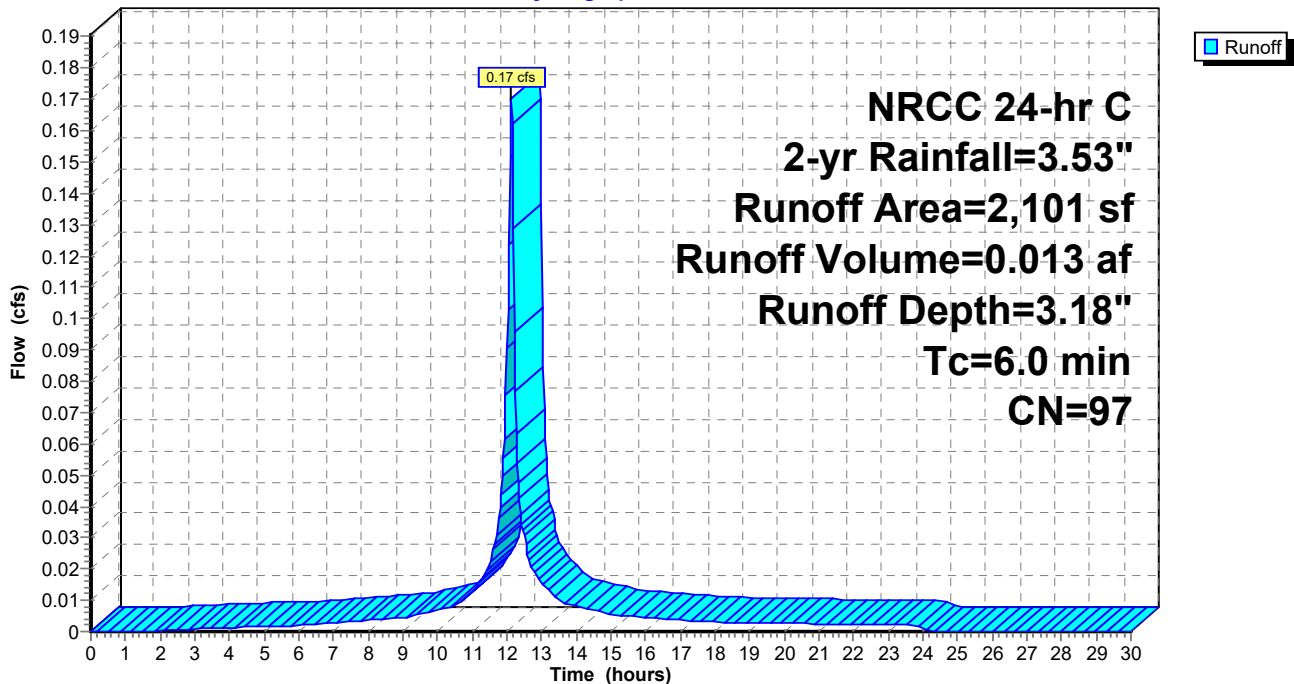
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
2,026	98	Paved parking, HSG D
* 75	79	Landscaping, Good, HSG D
2,101	97	Weighted Average
75		3.57% Pervious Area
2,026		96.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assigned minimum

Subcatchment PR-4: CCB 06

Hydrograph



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Summary for Subcatchment PR-5: South Basin

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 0.018 af, Depth= 1.88"
 Routed to Pond B-1 : South Basin

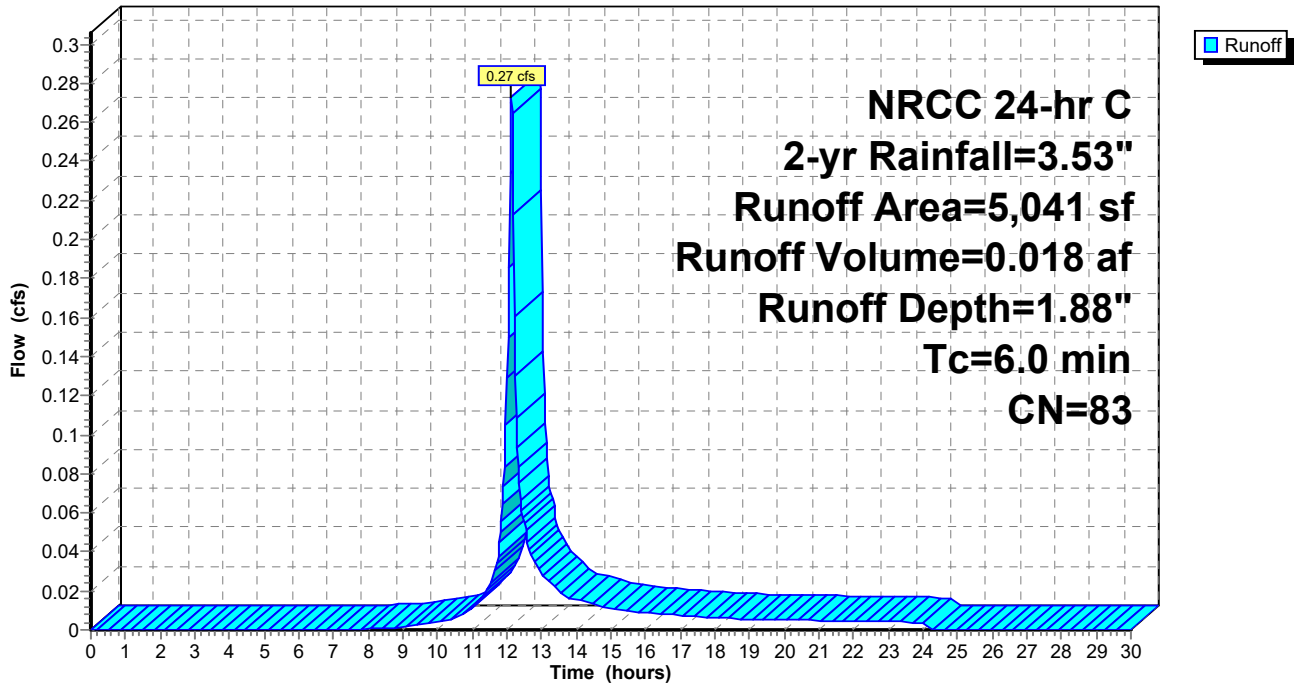
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
* 595	96	Permeable Paver, HSG C
* 366	96	Gravel surface, HSG C
* 2,205	72	Landscaping, Good, HSG C
* 890	98	Paved parking, HSG C
985	80	>75% Grass cover, Good, HSG D
5,041	83	Weighted Average
4,151		82.34% Pervious Area
890		17.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-5: South Basin

Hydrograph



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Summary for Subcatchment PR-6: West along river

Runoff = 1.07 cfs @ 12.13 hrs, Volume= 0.071 af, Depth= 1.96"
 Routed to Pond AP-1 : Norwalk River

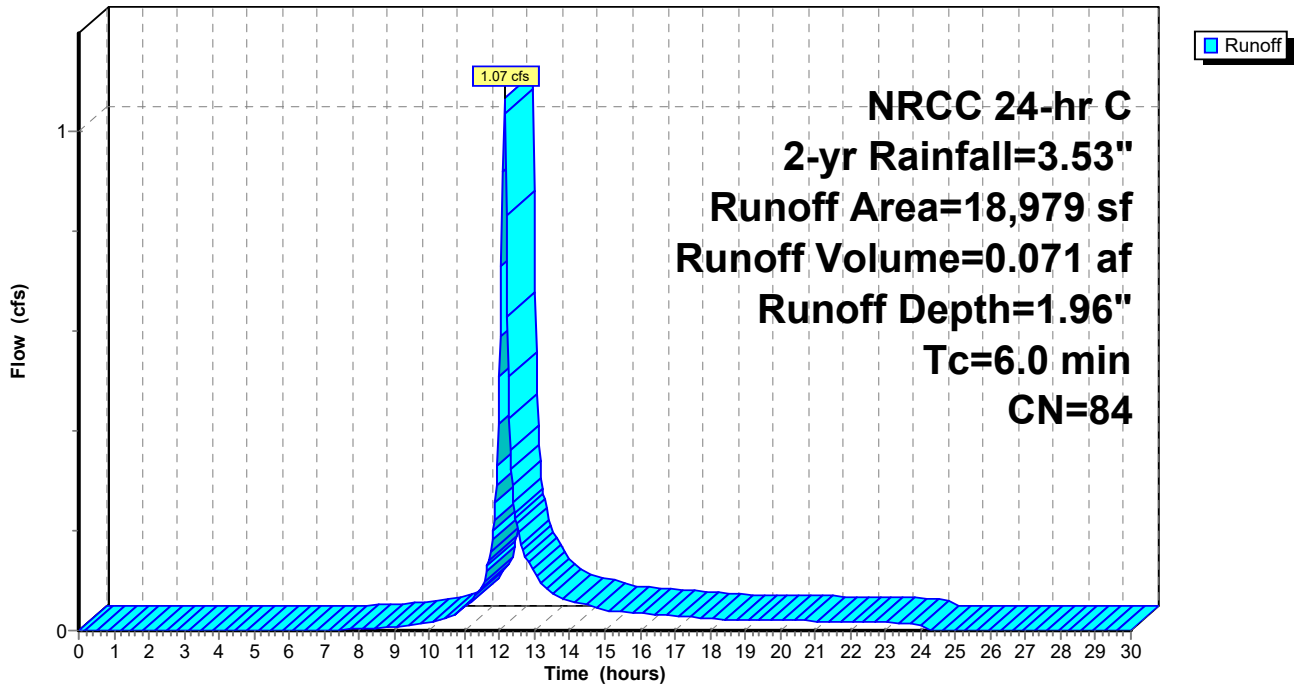
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

	Area (sf)	CN	Description
*	4,195	96	Permeable paver, HSG D
	461	96	Gravel surface, HSG D
	911	98	Paved parking, HSG D
	2,775	80	>75% Grass cover, Good, HSG D
*	6,489	79	Landscaping, Good, HSG D
	4,148	77	Woods, Good, HSG D
	18,979	84	Weighted Average
	18,068		95.20% Pervious Area
	911		4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-6: West along river

Hydrograph



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Summary for Subcatchment PR-7: North basin

Runoff = 0.38 cfs @ 12.13 hrs, Volume= 0.025 af, Depth= 1.96"
 Routed to Pond B-2 : North Basin

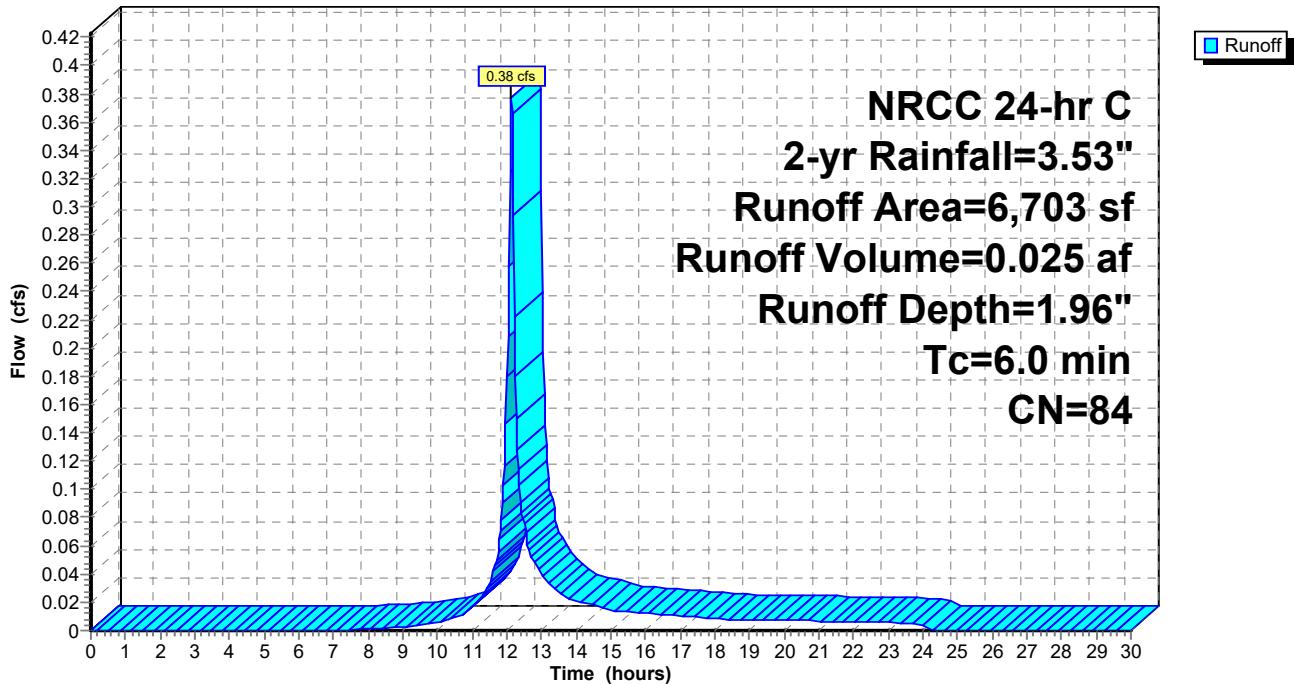
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
453	96	Gravel surface, HSG D
* 1,031	96	Permeable paver, HSG D
445	80	>75% Grass cover, Good, HSG D
* 3,601	79	Landscaping, Good, HSG D
692	77	Woods, Good, HSG D
481	98	Paved parking, HSG D
6,703	84	Weighted Average
6,222		92.82% Pervious Area
481		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7: North basin

Hydrograph



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Summary for Subcatchment PR-7B: CCB 26

Runoff = 0.33 cfs @ 12.13 hrs, Volume= 0.024 af, Depth= 2.86"
Routed to Reach R2 : Site Stormwater System

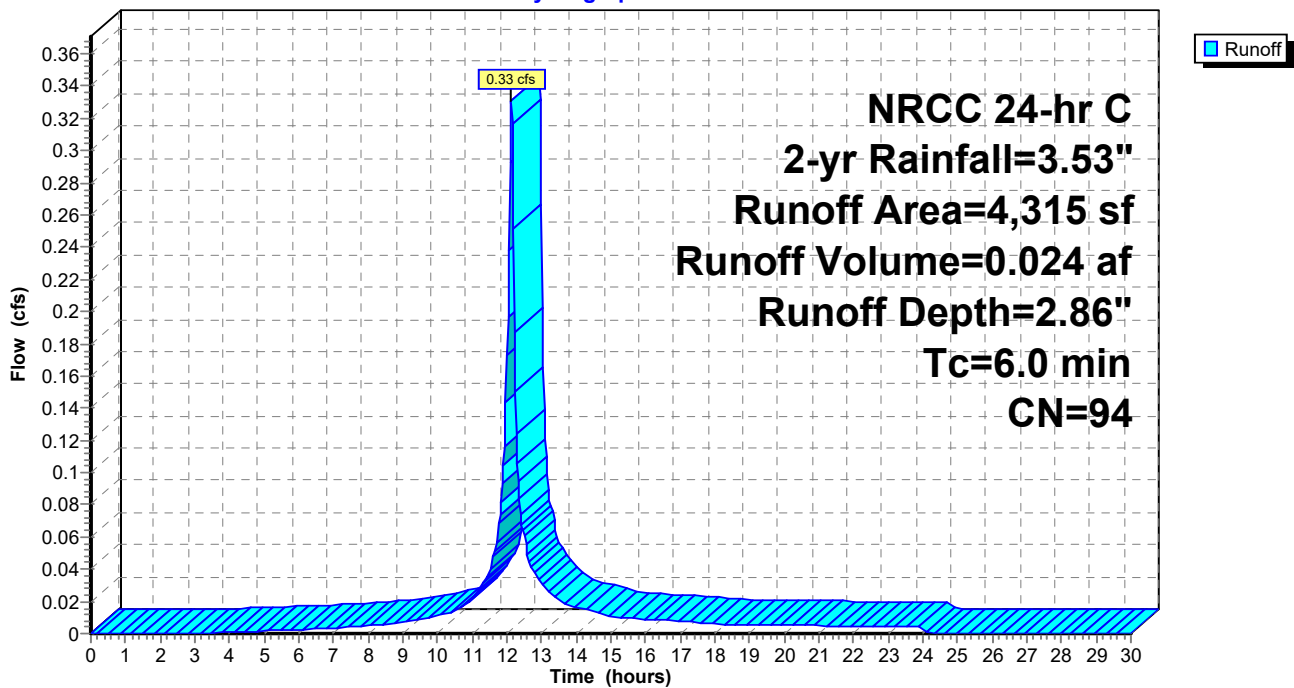
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
3,518	98	Paved parking, HSG D
* 797	79	Landscaping, Good, HSG D
4,315	94	Weighted Average
797		18.47% Pervious Area
3,518		81.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7B: CCB 26

Hydrograph



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Summary for Subcatchment PR-8: CCB 26A

Runoff = 0.49 cfs @ 12.13 hrs, Volume= 0.034 af, Depth= 2.76"
Routed to Reach R2 : Site Stormwater System

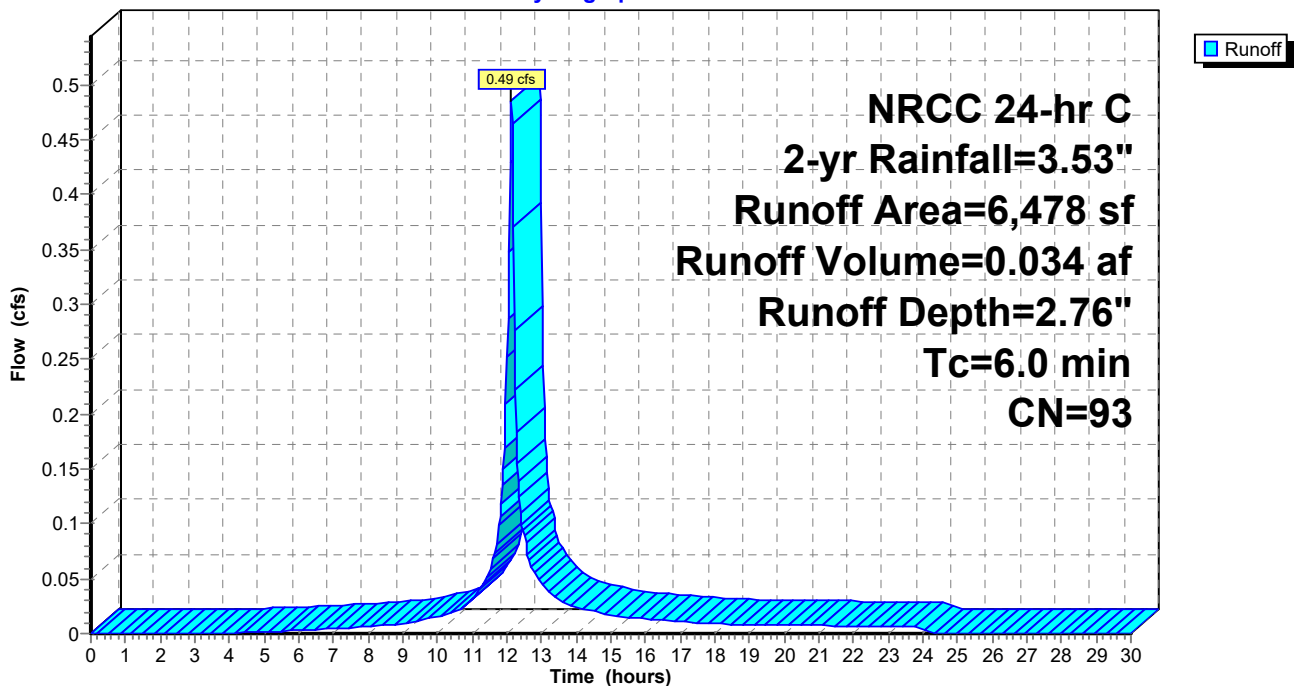
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
4,737	98	Paved parking, HSG D
* 1,741	79	Landscaping, Good, HSG D
6,478	93	Weighted Average
1,741		26.88% Pervious Area
4,737		73.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-8: CCB 26A

Hydrograph



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Summary for Subcatchment PR-9: CCB 27

Runoff = 0.80 cfs @ 12.13 hrs, Volume= 0.053 af, Depth= 2.12"
 Routed to Reach R2 : Site Stormwater System

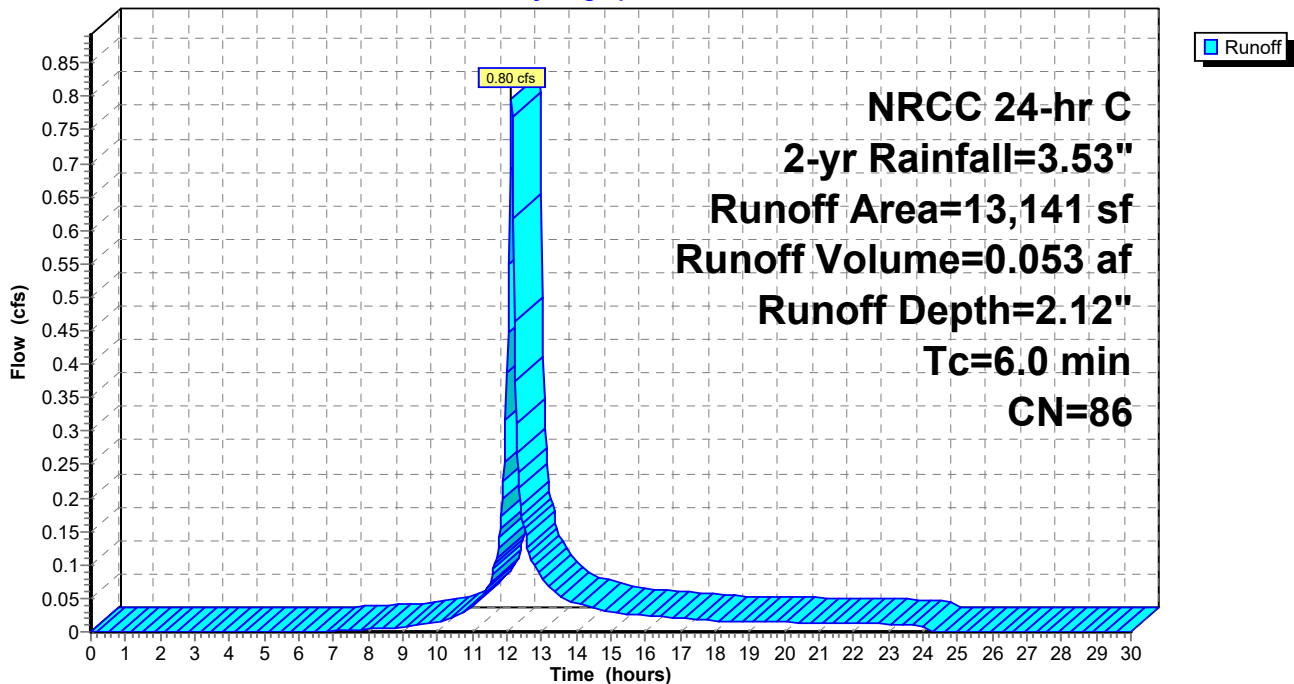
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 2-yr Rainfall=3.53"

Area (sf)	CN	Description
4,730	98	Paved parking, HSG D
817	80	>75% Grass cover, Good, HSG D
* 7,594	79	Landscaping, Good, HSG D
13,141	86	Weighted Average
8,411		64.01% Pervious Area
4,730		35.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-9: CCB 27

Hydrograph



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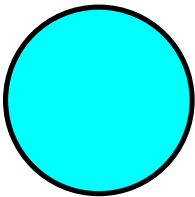
Summary for Reach R1: Roof Leader

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 3.30" for 2-yr event
Inflow = 6.57 cfs @ 12.13 hrs, Volume= 0.505 af
Outflow = 1.31 cfs @ 11.79 hrs, Volume= 0.505 af, Atten= 80%, Lag= 0.0 min
Routed to Pond S-2 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.27 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.46 fps, Avg. Travel Time= 0.1 min

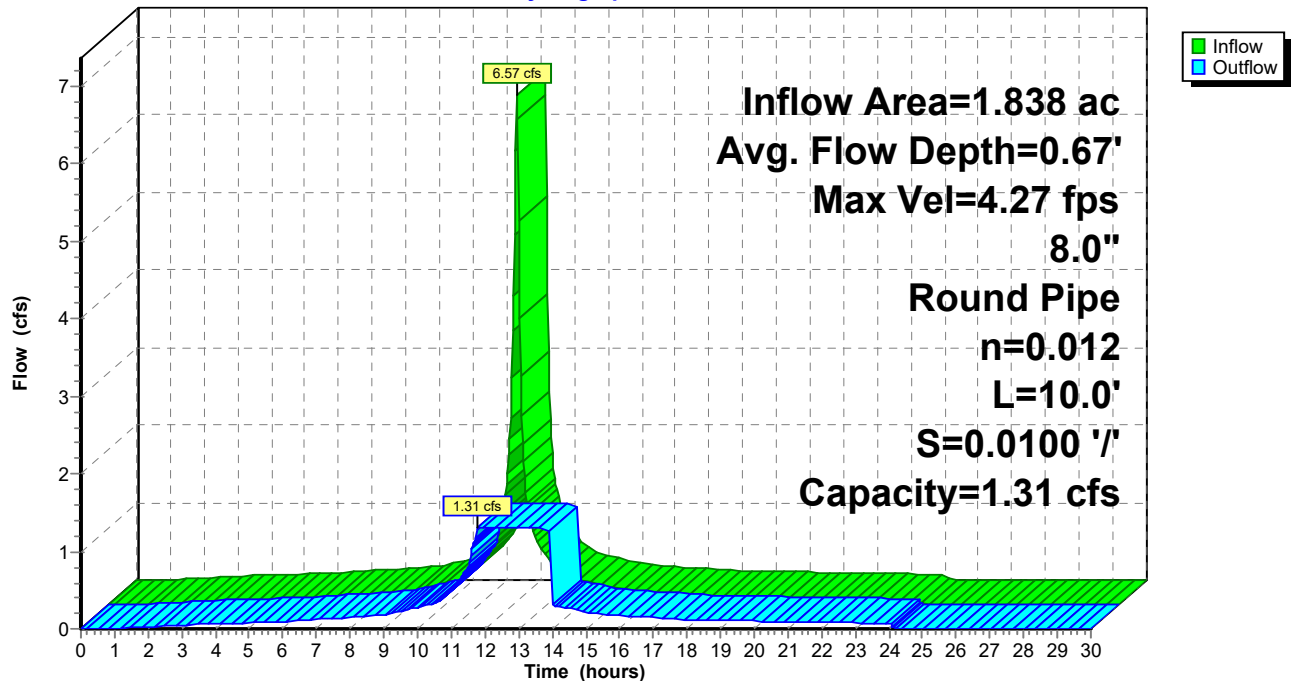
Peak Storage= 3 cf @ 11.79 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 0.00'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 10.0' Slope= 0.0100 '/'
Inlet Invert= 142.20', Outlet Invert= 142.10'



Reach R1: Roof Leader

Hydrograph

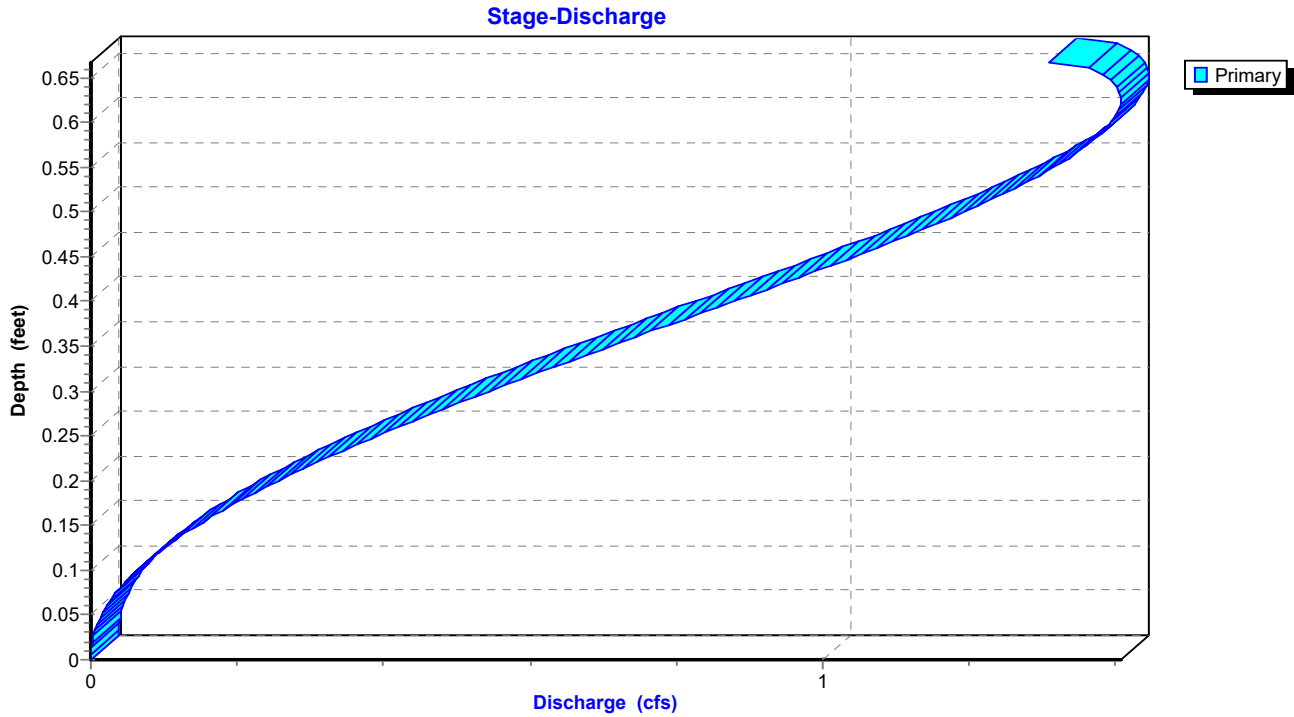


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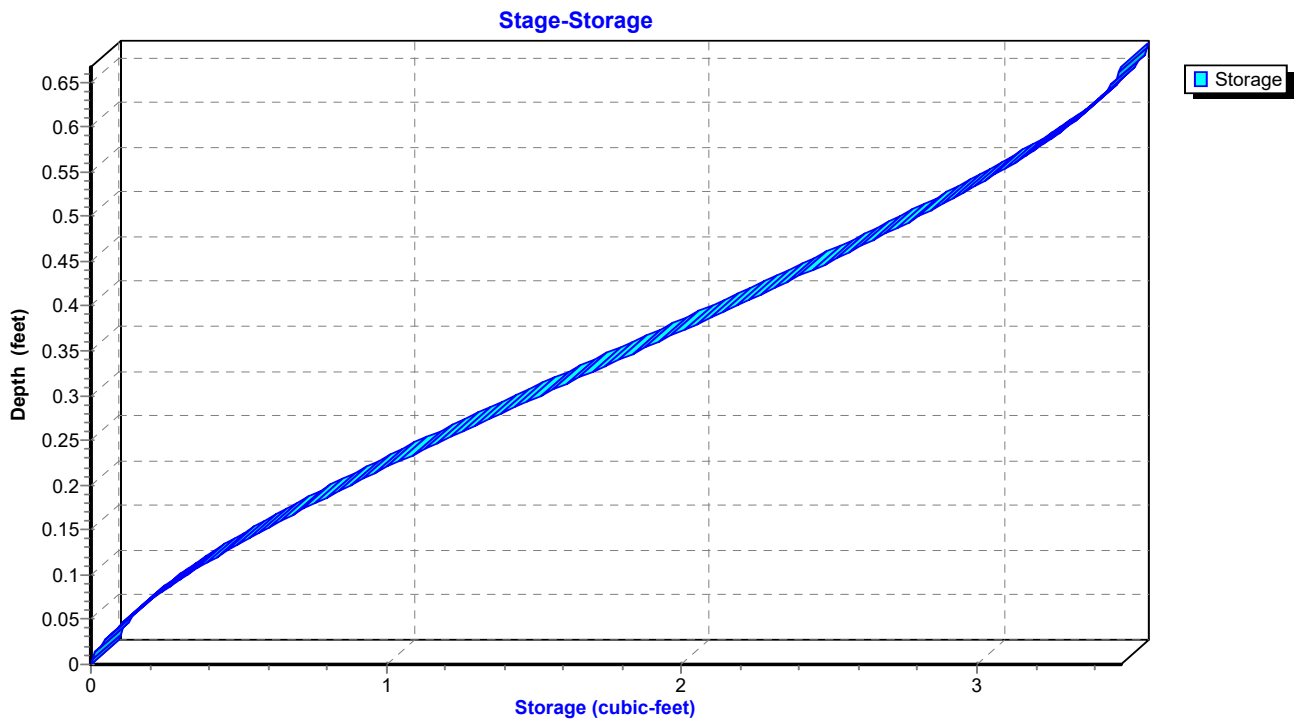
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Reach R1: Roof Leader



Reach R1: Roof Leader



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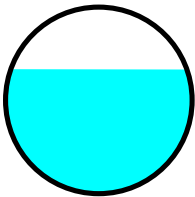
Summary for Reach R2: Site Stormwater System

Inflow Area = 1.221 ac, 71.23% Impervious, Inflow Depth = 2.72" for 2-yr event
Inflow = 3.89 cfs @ 12.13 hrs, Volume= 0.276 af
Outflow = 3.87 cfs @ 12.13 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.3 min
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.45 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 0.9 min

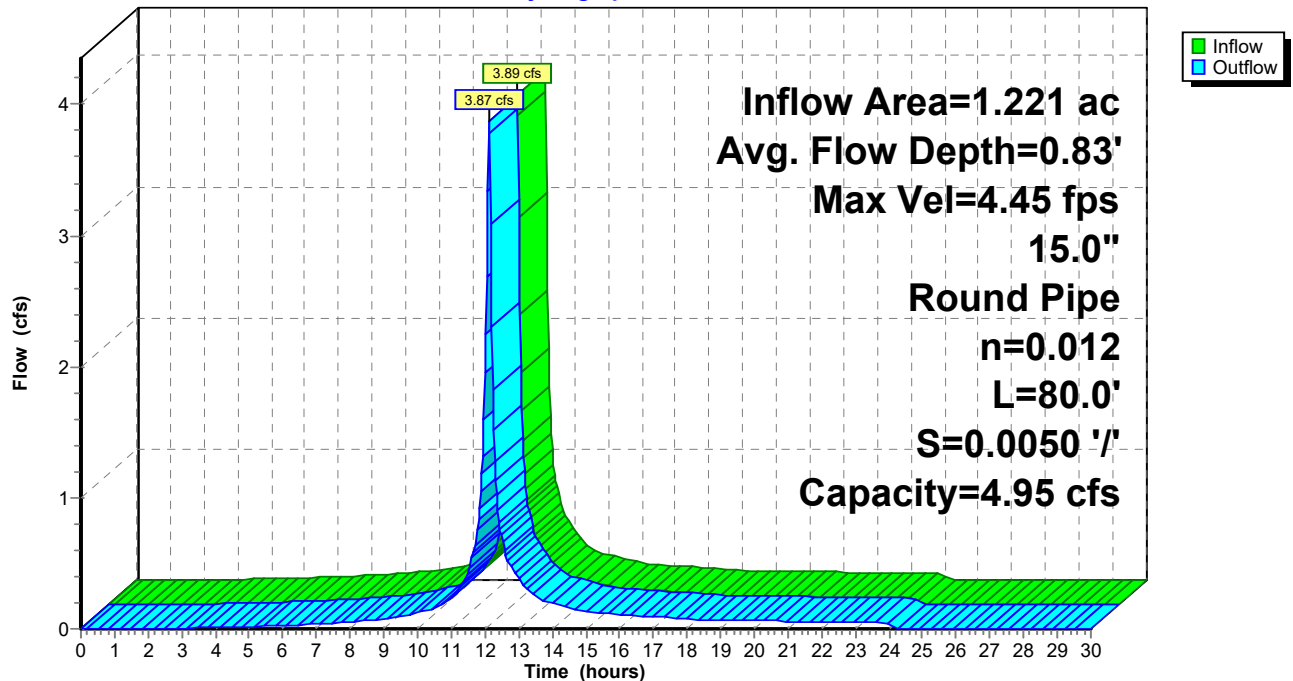
Peak Storage= 69 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.83' , Surface Width= 1.18'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.95 cfs

15.0" Round Pipe
n= 0.012
Length= 80.0' Slope= 0.0050 '/'
Inlet Invert= 138.00', Outlet Invert= 137.60'



Reach R2: Site Stormwater System

Hydrograph

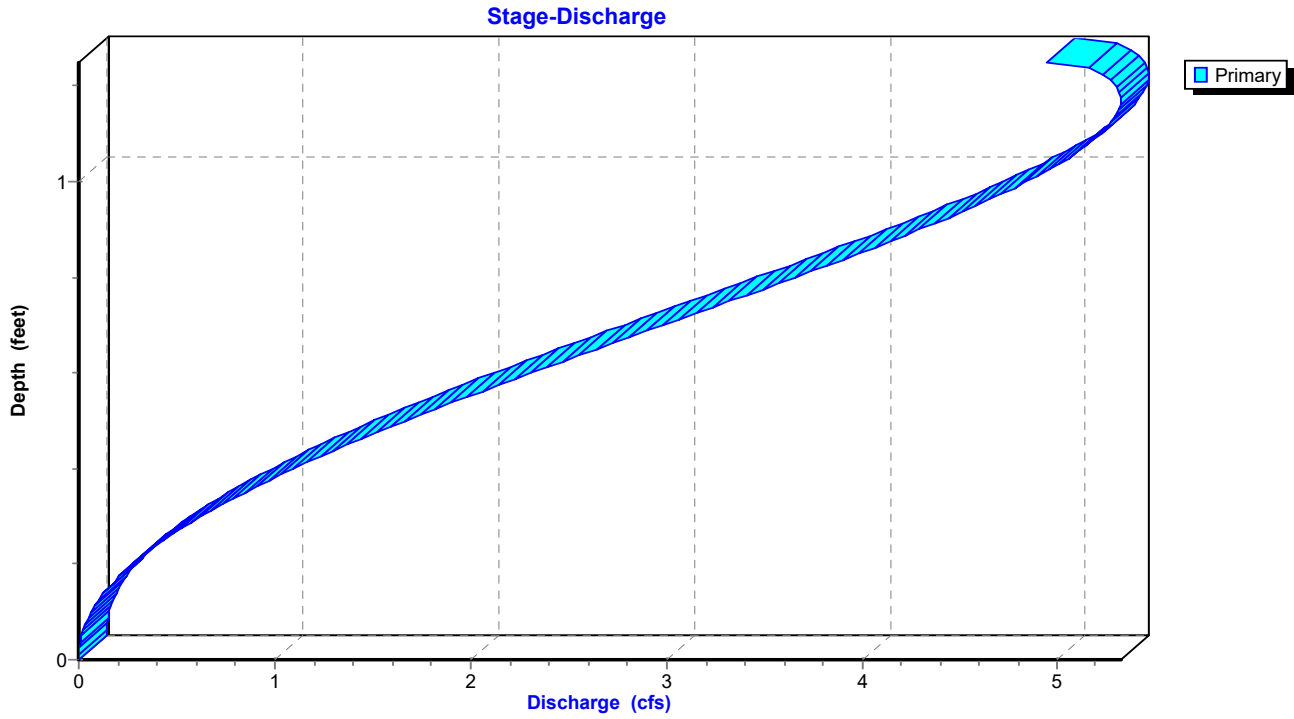


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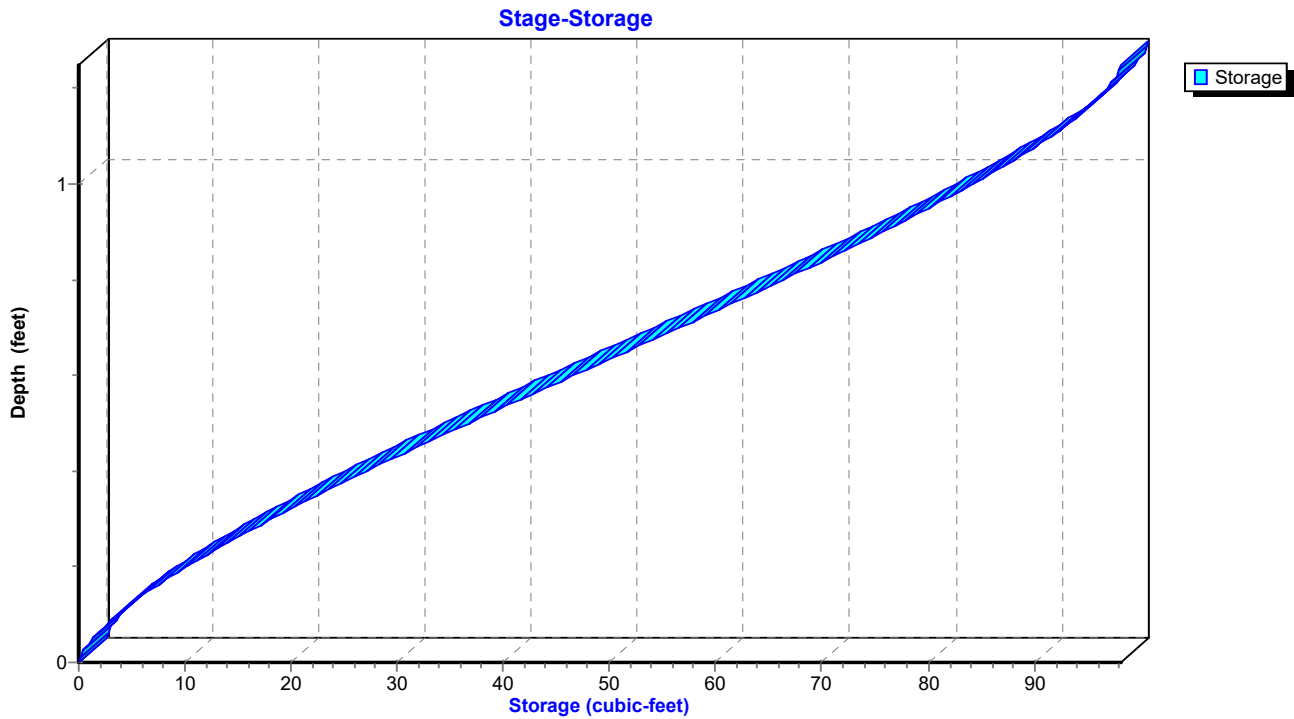
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Reach R2: Site Stormwater System



Reach R2: Site Stormwater System



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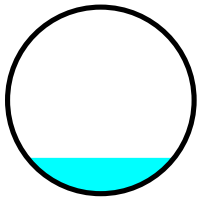
Summary for Reach R3: East Stormwater System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 0.75" for 2-yr event
Inflow = 0.56 cfs @ 12.13 hrs, Volume= 0.040 af
Outflow = 0.56 cfs @ 12.13 hrs, Volume= 0.040 af, Atten= 1%, Lag= 0.4 min
Routed to Pond S-1 : Subsurface Infiltration System

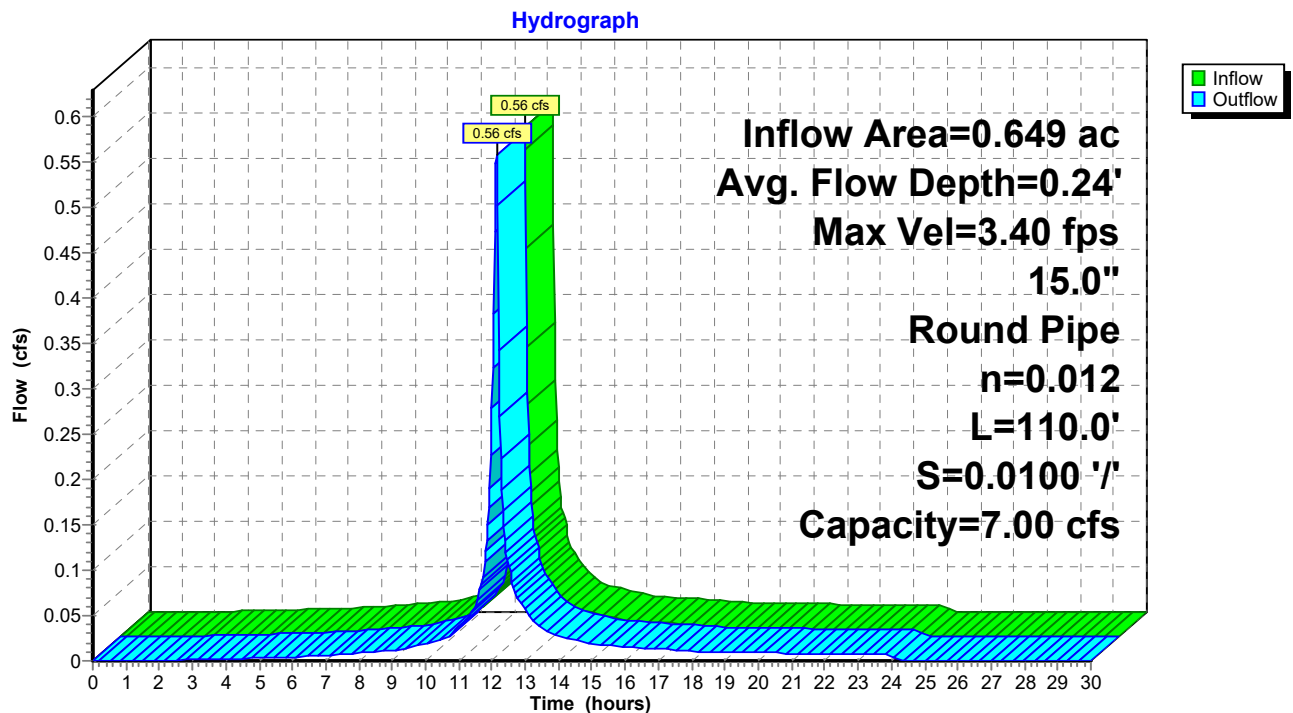
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 3.40 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 1.7 min

Peak Storage= 18 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 0.98'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe
n= 0.012
Length= 110.0' Slope= 0.0100 '/'
Inlet Invert= 144.80', Outlet Invert= 143.70'



Reach R3: East Stormwater System

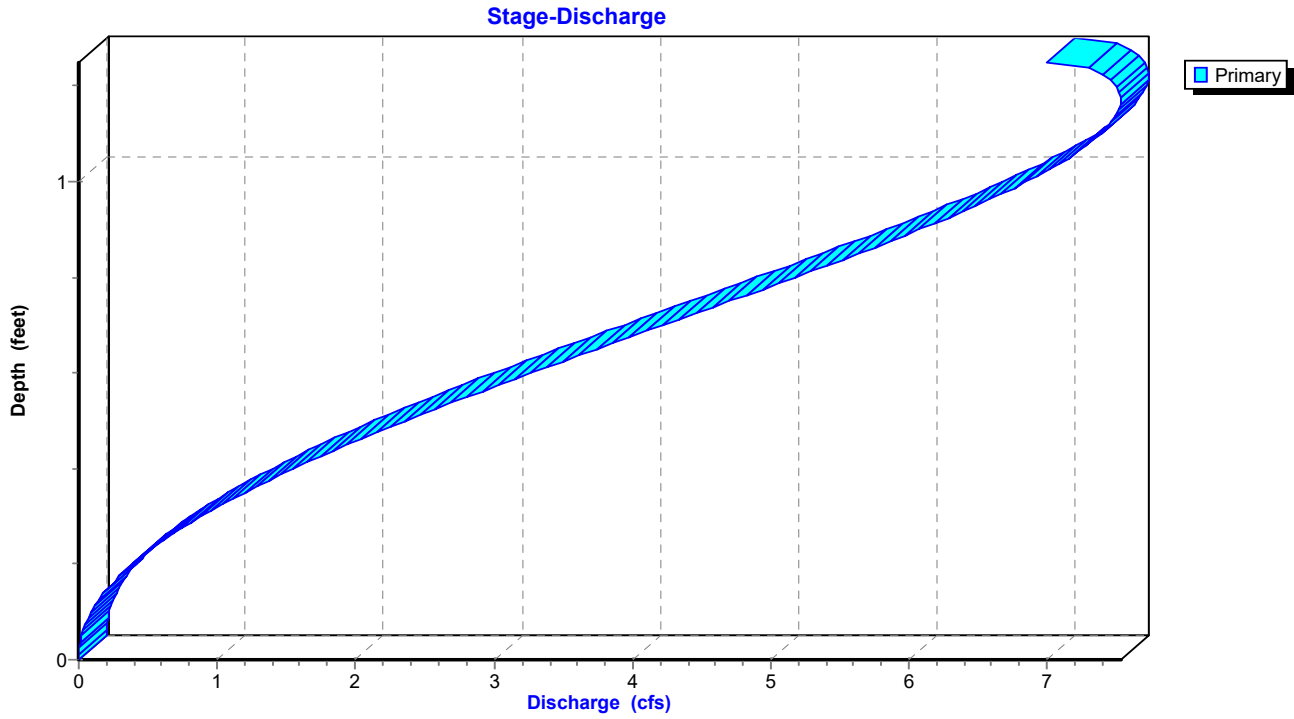


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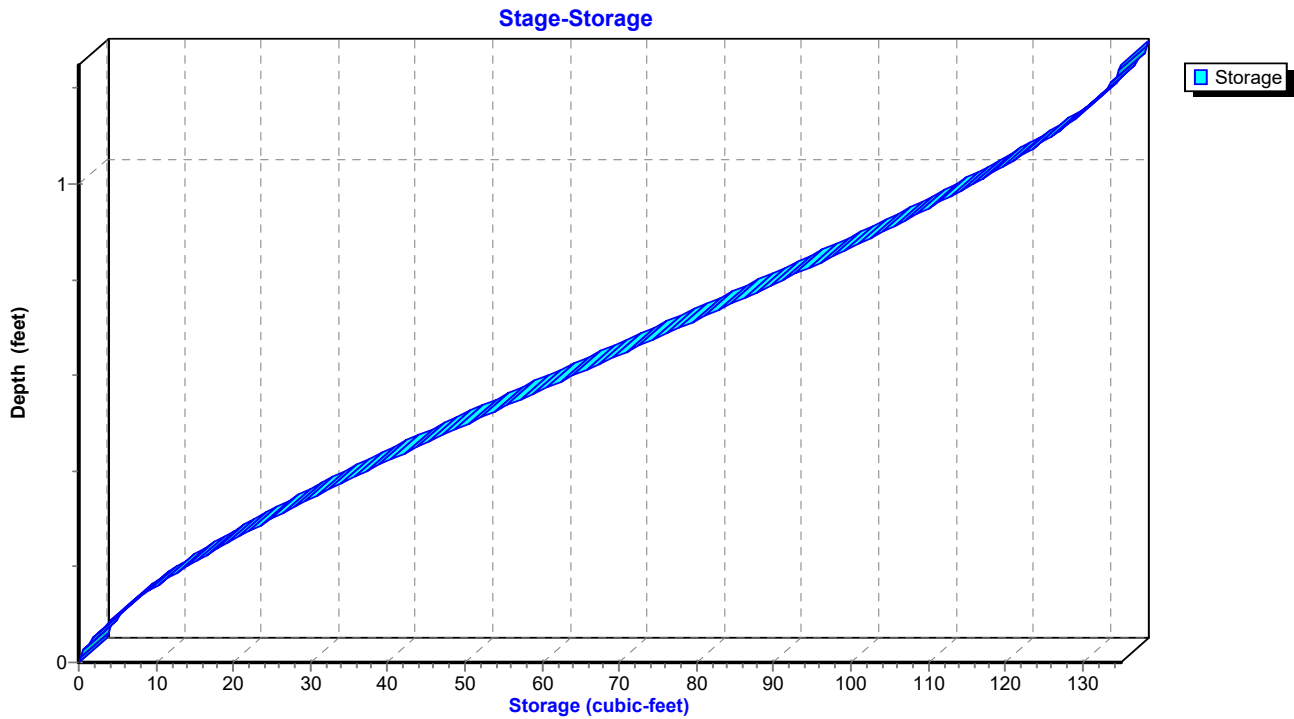
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Reach R3: East Stormwater System



Reach R3: East Stormwater System



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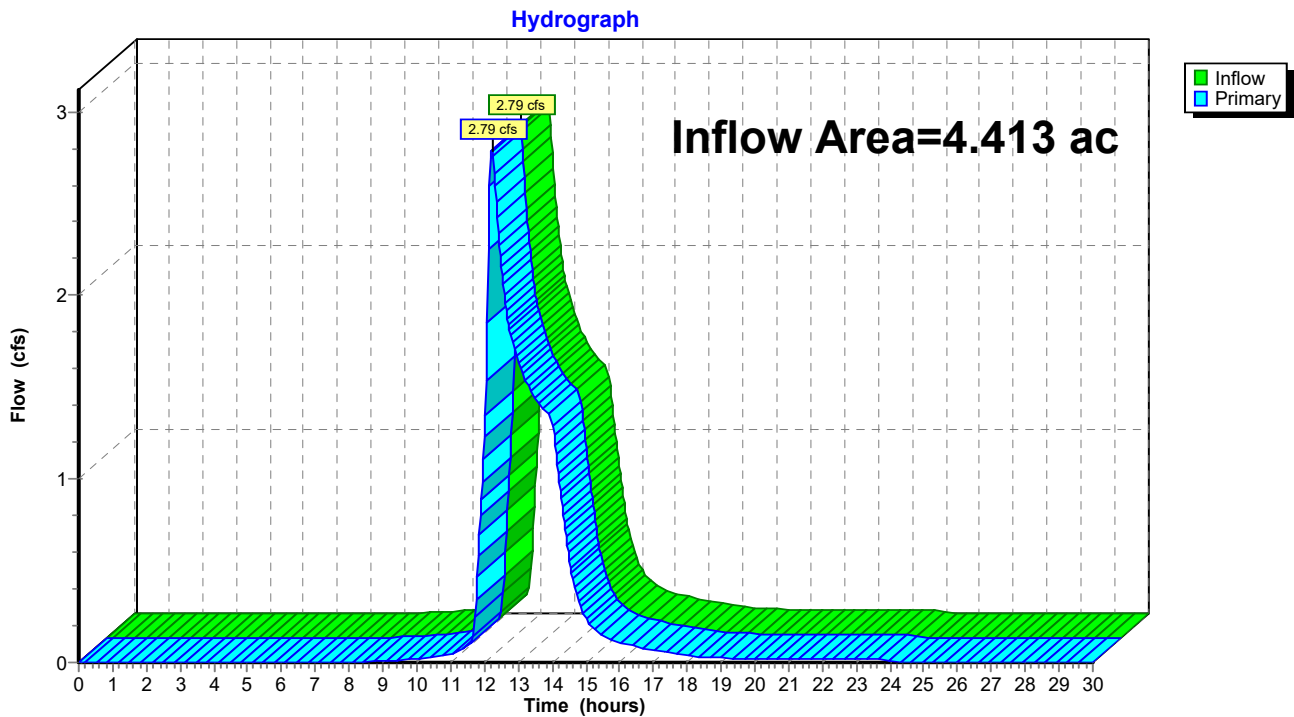
Proposed Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"
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Summary for Pond AP-1: Norwalk River

Inflow Area = 4.413 ac, 66.52% Impervious, Inflow Depth = 1.11" for 2-yr event
Inflow = 2.79 cfs @ 12.22 hrs, Volume= 0.407 af
Primary = 2.79 cfs @ 12.22 hrs, Volume= 0.407 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River



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Summary for Pond AP-2: Front Lawn Rain Garden

Inflow Area = 0.475 ac, 24.65% Impervious, Inflow Depth = 1.98" for 2-yr event
Inflow = 1.14 cfs @ 12.13 hrs, Volume= 0.078 af
Outflow = 0.11 cfs @ 13.09 hrs, Volume= 0.078 af, Atten= 90%, Lag= 57.3 min
Discarded = 0.11 cfs @ 13.09 hrs, Volume= 0.078 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach R3 : East Stormwater System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 148.53' @ 13.09 hrs Surf.Area= 2,435 sf Storage= 1,173 cf

Plug-Flow detention time= 84.7 min calculated for 0.078 af (100% of inflow)
Center-of-Mass det. time= 84.6 min (906.7 - 822.1)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	6,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	1,985	0	0
149.00	2,833	2,409	2,409
150.00	5,420	4,127	6,536

Device	Routing	Invert	Outlet Devices
#1	Primary	141.00'	15.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 141.00' / 140.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	149.00'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	148.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.11 cfs @ 13.09 hrs HW=148.53' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.11 cfs)

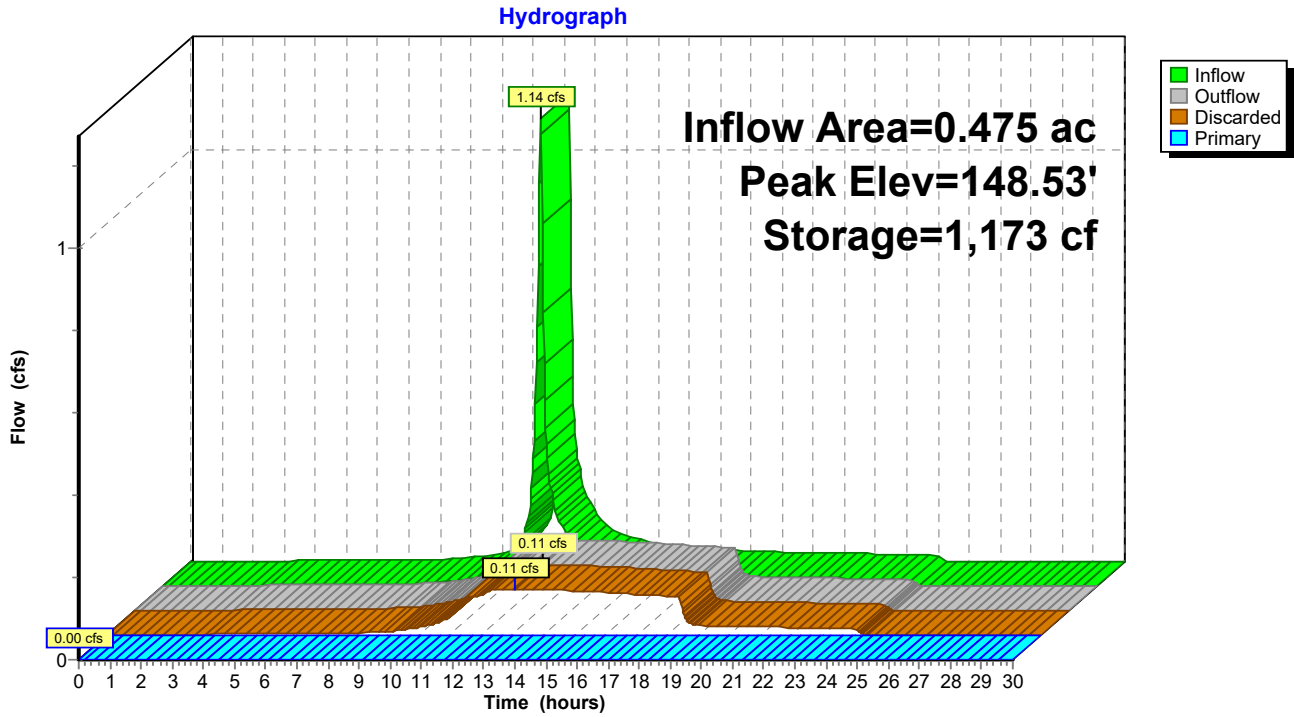
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=148.00' (Free Discharge)
↑**1=Culvert** (Passes 0.00 cfs of 14.92 cfs potential flow)
↑**2=Yard Drain** (Controls 0.00 cfs)

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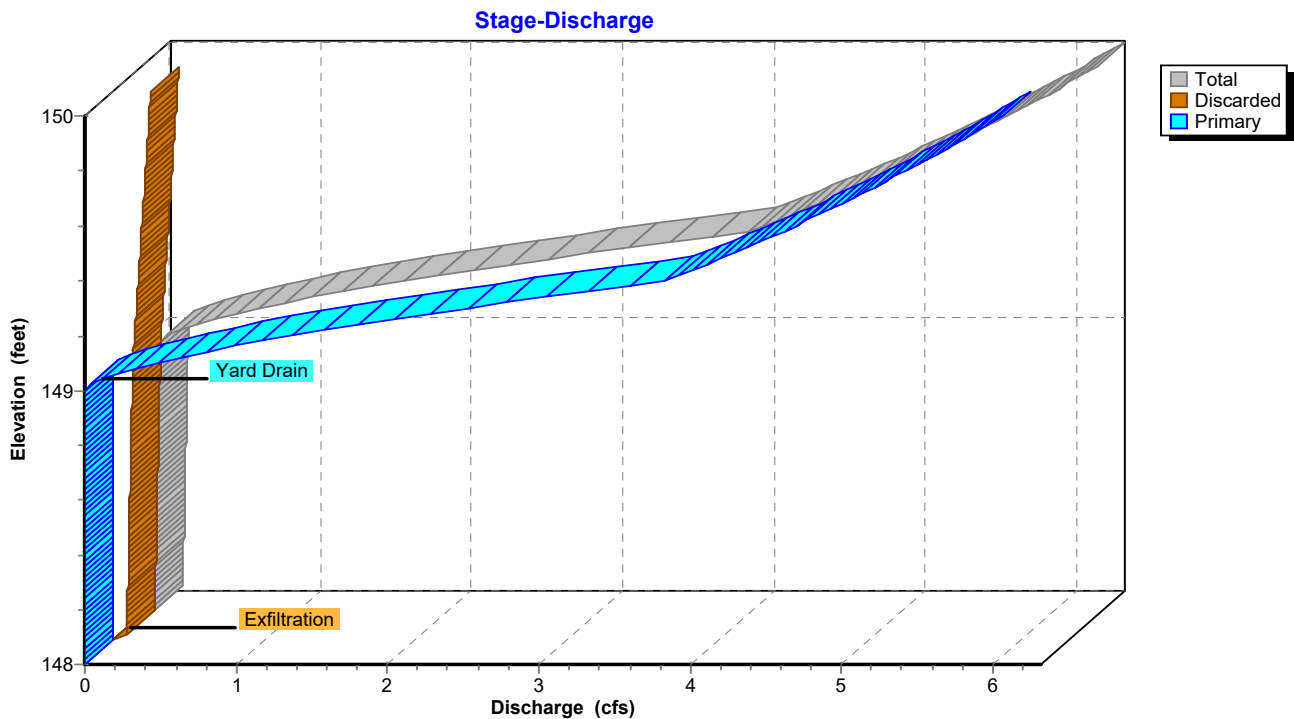
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Pond AP-2: Front Lawn Rain Garden



Pond AP-2: Front Lawn Rain Garden

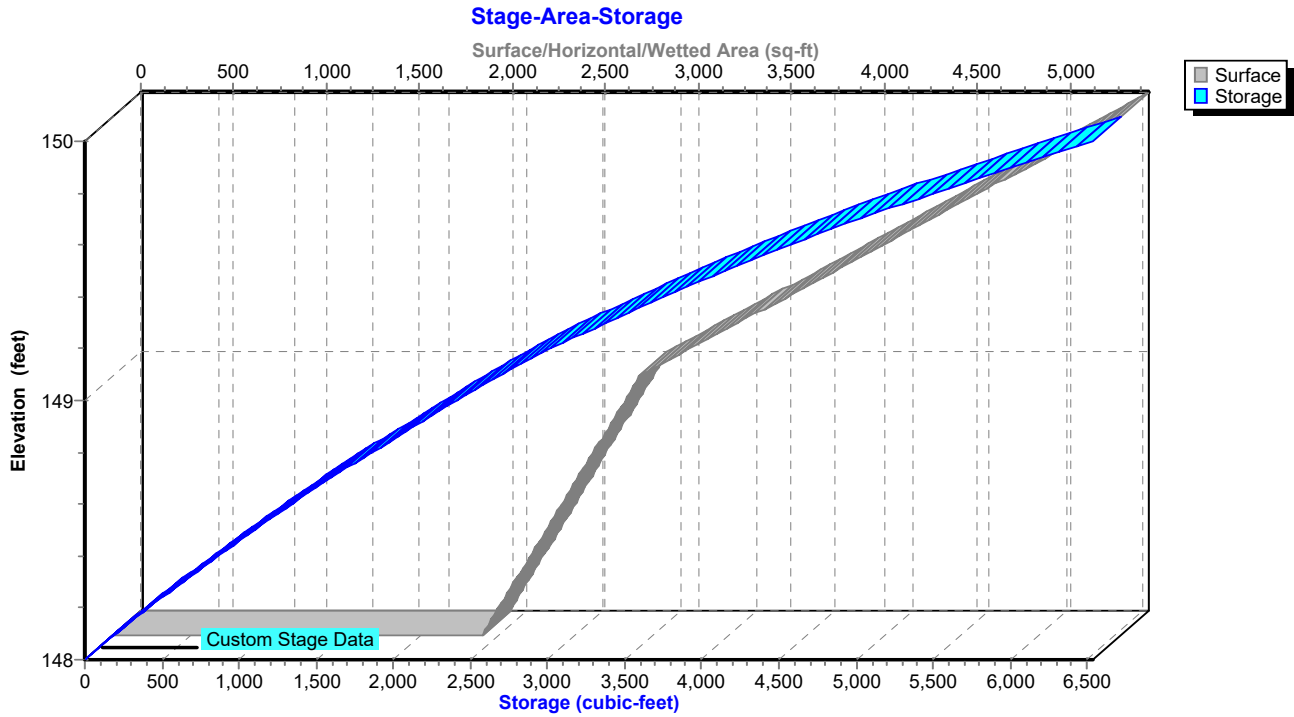


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Pond AP-2: Front Lawn Rain Garden



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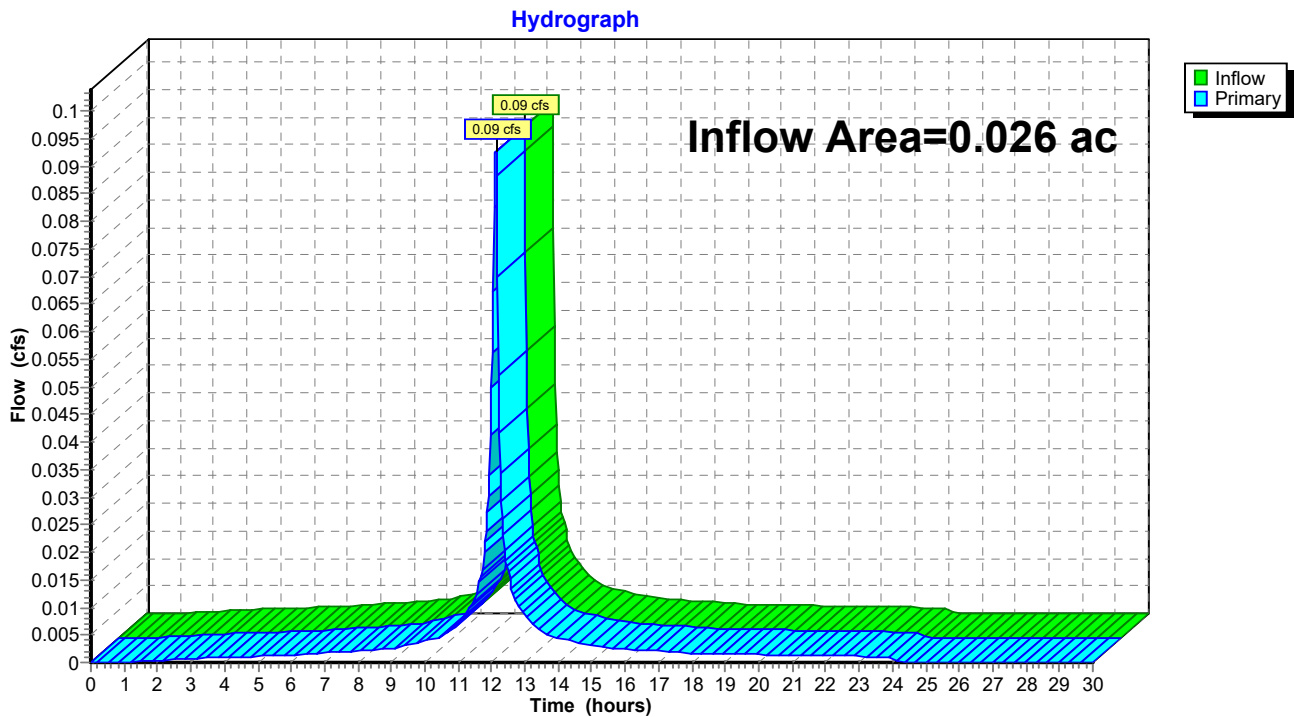
Proposed Conditions
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Summary for Pond AP-3: Danbury Road

Inflow Area = 0.026 ac, 100.00% Impervious, Inflow Depth = 3.30" for 2-yr event
Inflow = 0.09 cfs @ 12.13 hrs, Volume= 0.007 af
Primary = 0.09 cfs @ 12.13 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-3: Danbury Road



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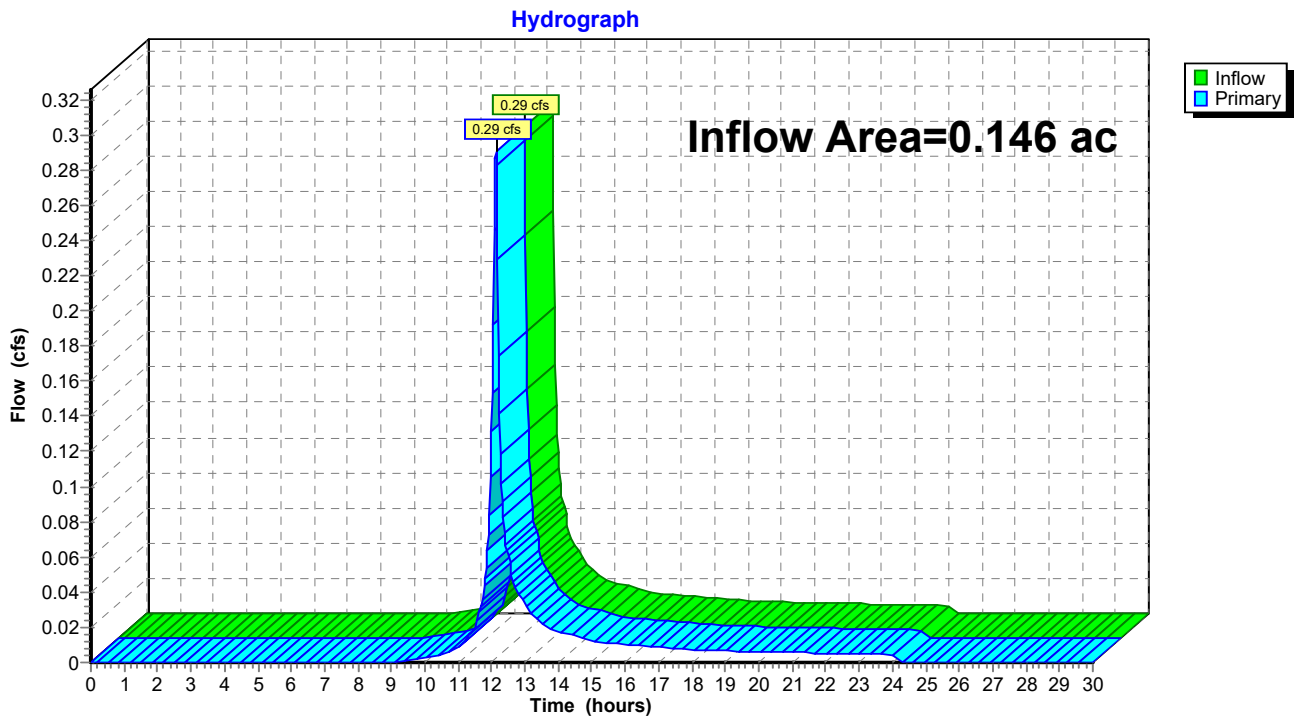
Proposed Conditions
NRCC 24-hr C 2-yr Rainfall=3.53"
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Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.146 ac, 1.46% Impervious, Inflow Depth = 1.59" for 2-yr event
Inflow = 0.29 cfs @ 12.13 hrs, Volume= 0.019 af
Primary = 0.29 cfs @ 12.13 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Summary for Pond B-1: South Basin

Inflow Area = 0.116 ac, 17.66% Impervious, Inflow Depth = 1.88" for 2-yr event
Inflow = 0.27 cfs @ 12.13 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.29 hrs, Volume= 0.018 af, Atten= 91%, Lag= 69.7 min
Discarded = 0.02 cfs @ 13.29 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.88' @ 13.29 hrs Surf.Area= 503 sf Storage= 323 cf

Plug-Flow detention time= 142.0 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 141.8 min (980.0 - 838.2)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,118 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	228	0	0
140.00	539	384	384
141.00	929	734	1,118

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	139.90'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 13.29 hrs HW=139.88' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' (Free Discharge)
↑**1=Culvert** (Passes 0.00 cfs of 1.31 cfs potential flow)
↑**2=Yard Drain** (Controls 0.00 cfs)

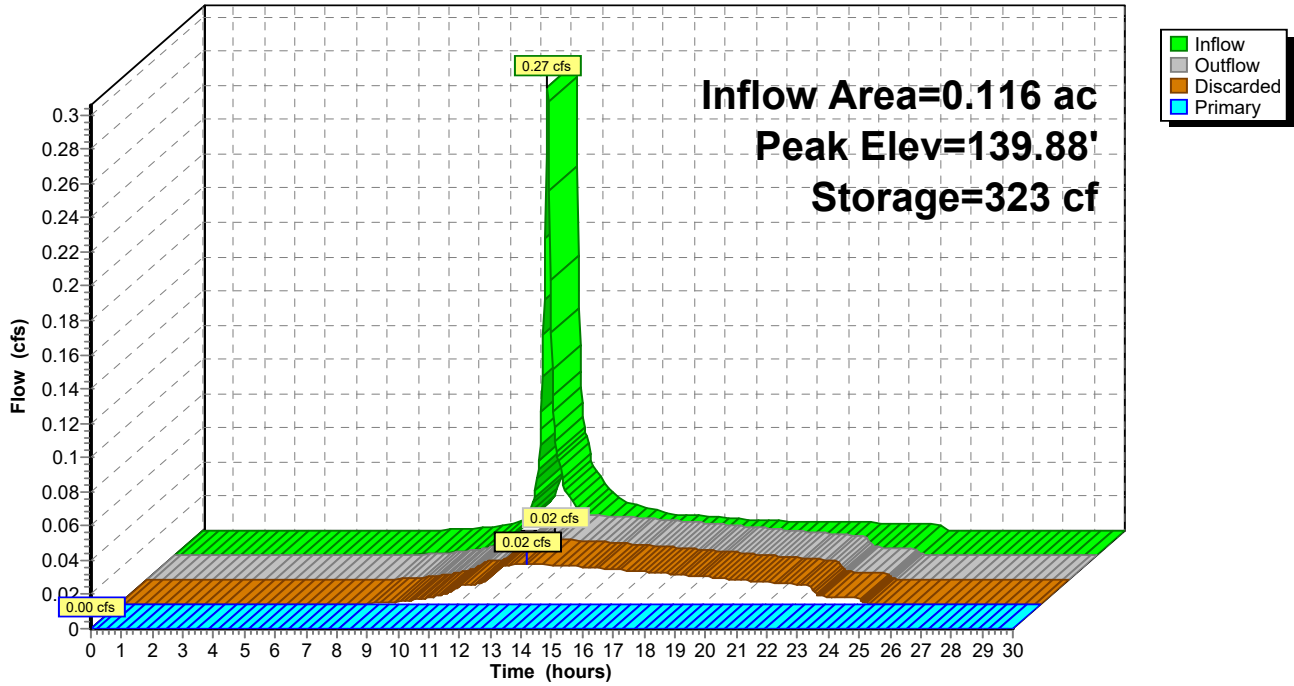
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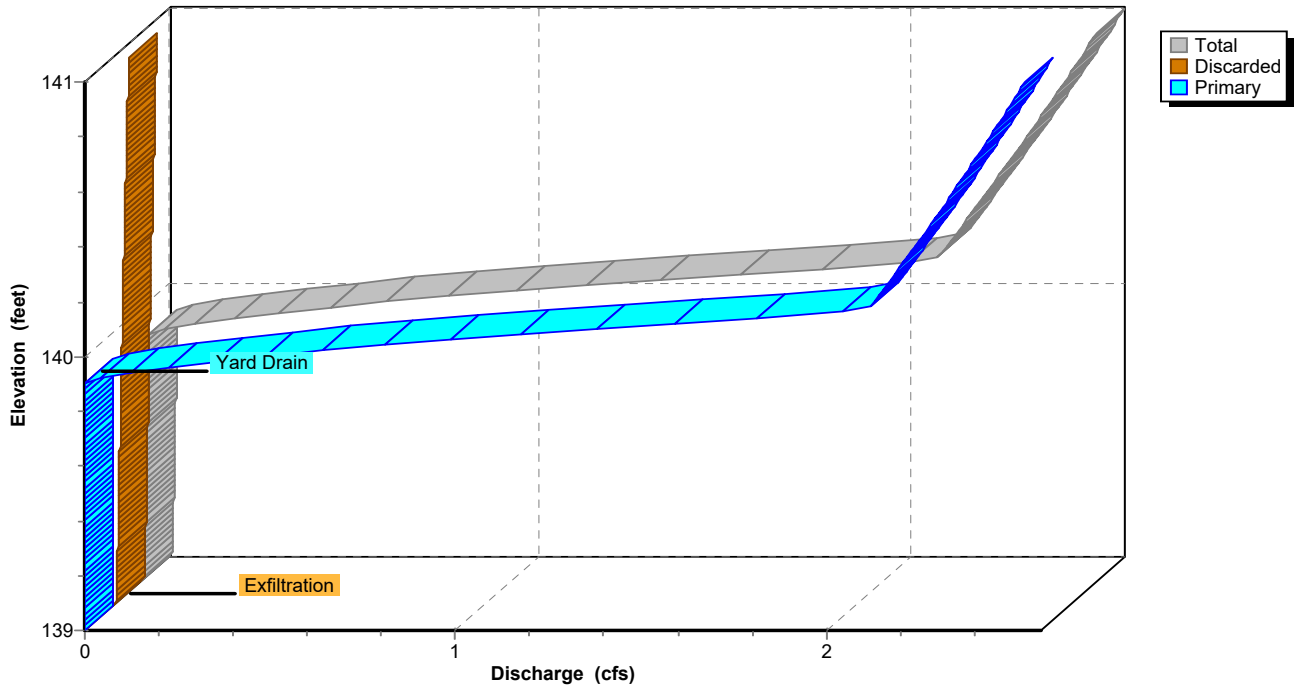
Pond B-1: South Basin

Hydrograph



Pond B-1: South Basin

Stage-Discharge



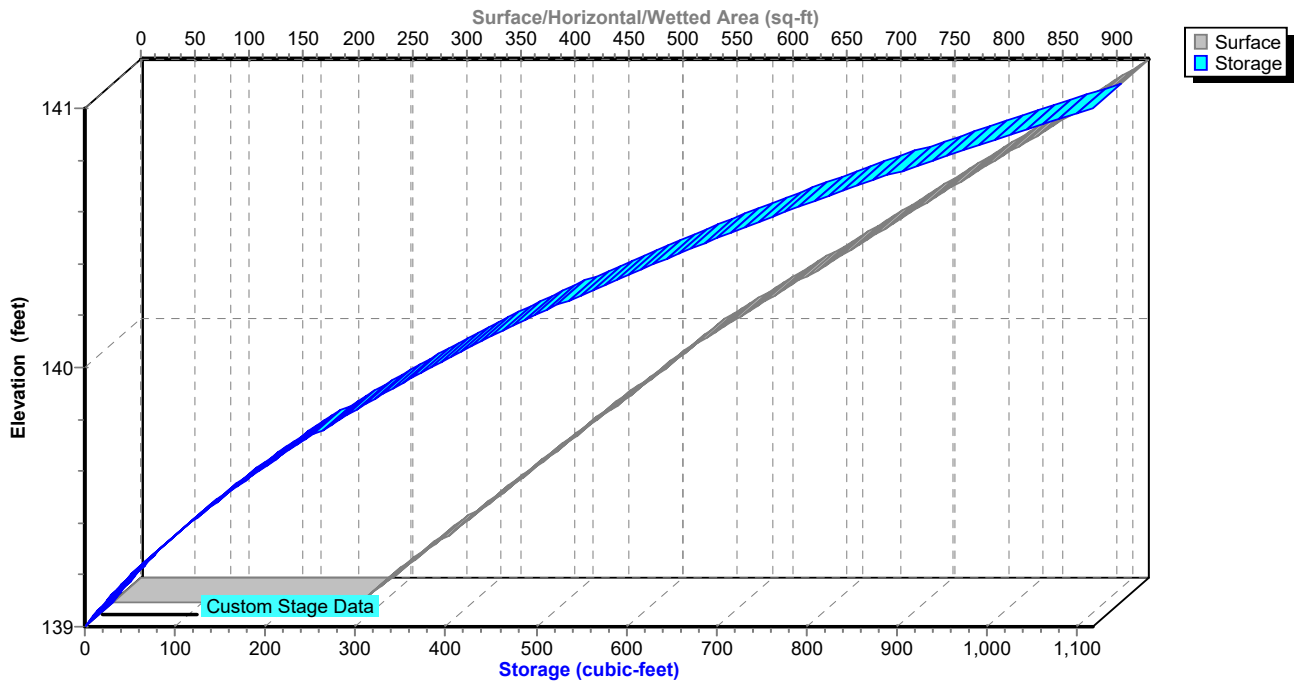
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Pond B-1: South Basin

Stage-Area-Storage



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Summary for Pond B-2: North Basin

Inflow Area = 0.154 ac, 7.18% Impervious, Inflow Depth = 1.96" for 2-yr event
Inflow = 0.38 cfs @ 12.13 hrs, Volume= 0.025 af
Outflow = 0.04 cfs @ 13.11 hrs, Volume= 0.025 af, Atten= 90%, Lag= 58.9 min
Discarded = 0.04 cfs @ 13.11 hrs, Volume= 0.025 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.58' @ 13.11 hrs Surf.Area= 786 sf Storage= 398 cf

Plug-Flow detention time= 94.5 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 94.5 min (929.0 - 834.6)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	589	0	0
140.00	930	760	760
141.00	1,327	1,129	1,888

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	10.0" Round Culvert L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	139.80'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 13.11 hrs HW=139.58' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

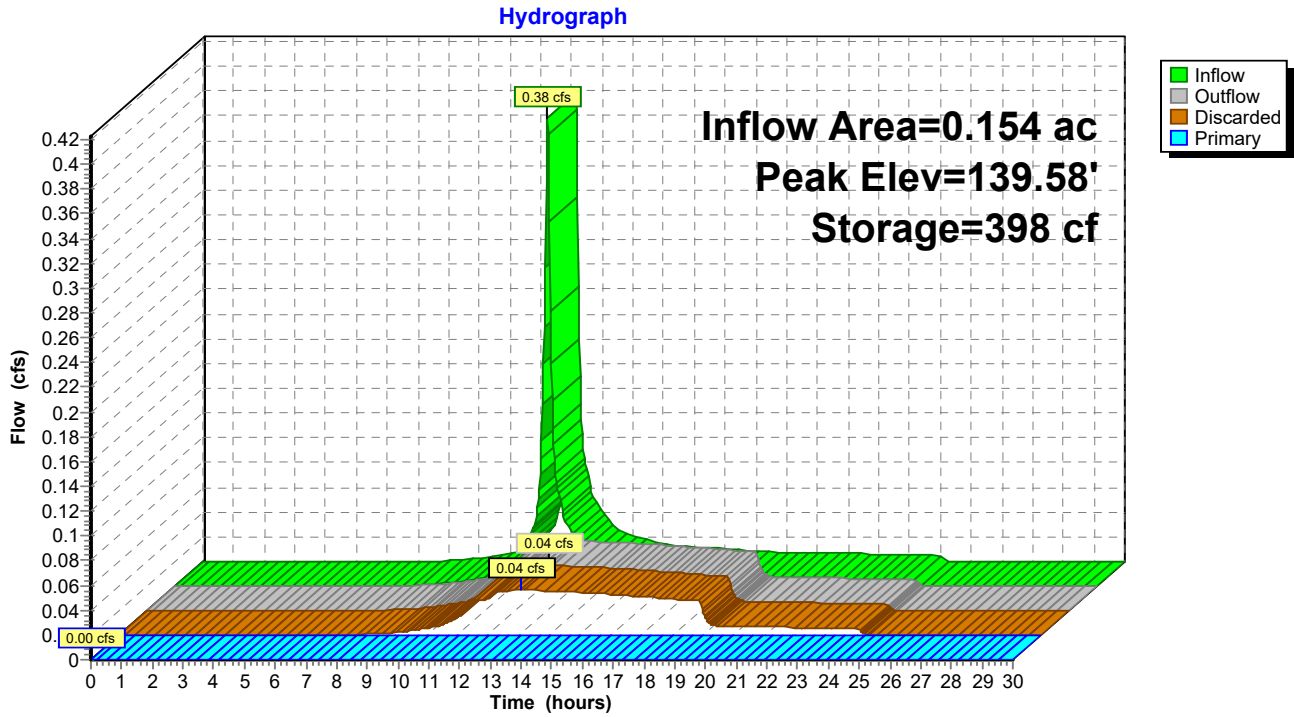
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' (Free Discharge)
↑**1=Culvert** (Passes 0.00 cfs of 1.77 cfs potential flow)
↑**2=Yard Drain** (Controls 0.00 cfs)

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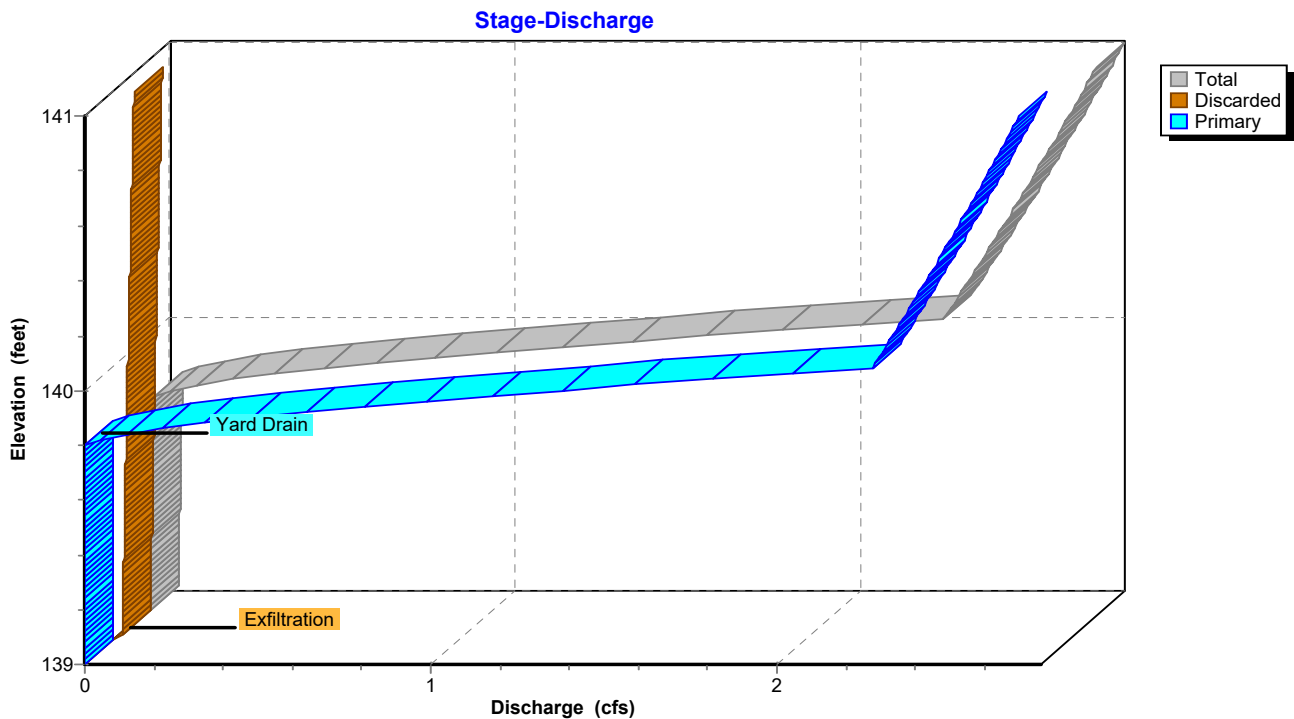
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Pond B-2: North Basin



Pond B-2: North Basin

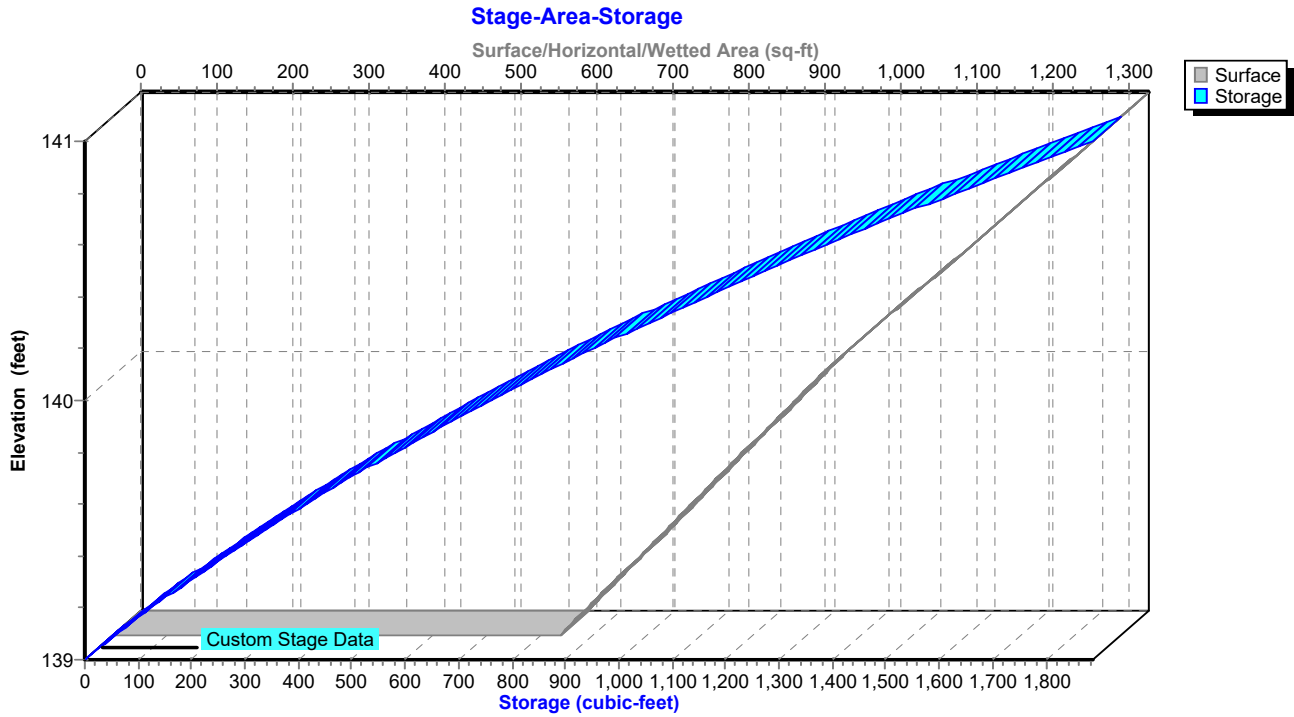


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Pond B-2: North Basin



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Summary for Pond S-1: Subsurface Infiltration System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 0.75" for 2-yr event
Inflow = 0.56 cfs @ 12.13 hrs, Volume= 0.040 af
Outflow = 0.06 cfs @ 11.52 hrs, Volume= 0.040 af, Atten= 90%, Lag= 0.0 min
Discarded = 0.06 cfs @ 11.52 hrs, Volume= 0.040 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 143.91' @ 12.97 hrs Surf.Area= 0.029 ac Storage= 0.013 af

Plug-Flow detention time= 66.7 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 66.6 min (853.9 - 787.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.10'	0.026 af	20.50"W x 60.58"L x 3.50"H Field A 0.100 af Overall - 0.034 af Embedded = 0.066 af x 40.0% Voids
#2A	143.60'	0.034 af	ADS_StormTech SC-740 +Cap x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 32 Chambers in 4 Rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	144.35'	15.0" Round Culvert L= 119.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.35' / 142.85' S= 0.0126 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	144.63'	4.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	146.00'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	143.10'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 11.52 hrs HW=143.14' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.10' (Free Discharge)
↑**1=Culvert** (Controls 0.00 cfs)
 ↑**2=Orifice** (Controls 0.00 cfs)
 ↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-1: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af

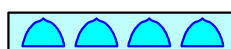
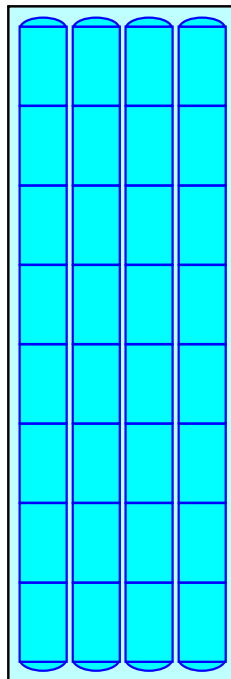
Overall Storage Efficiency = 60.3%

Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers

161.0 cy Field

106.5 cy Stone

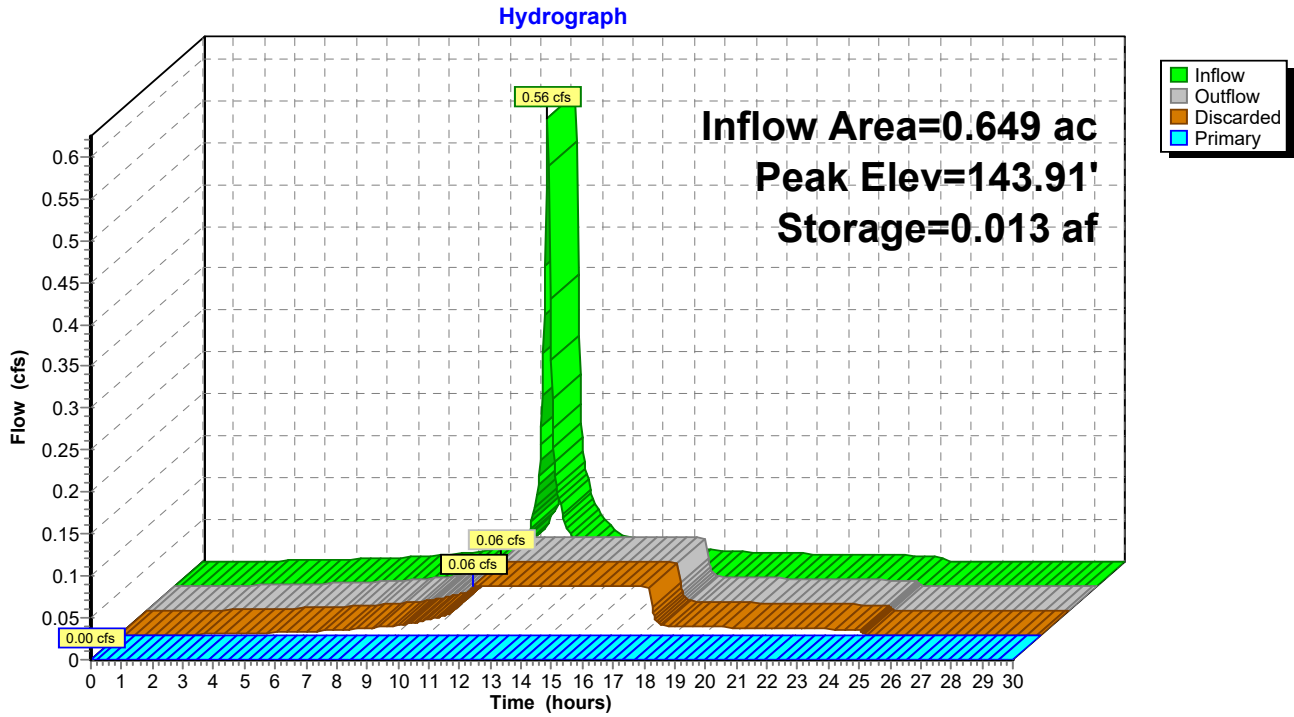


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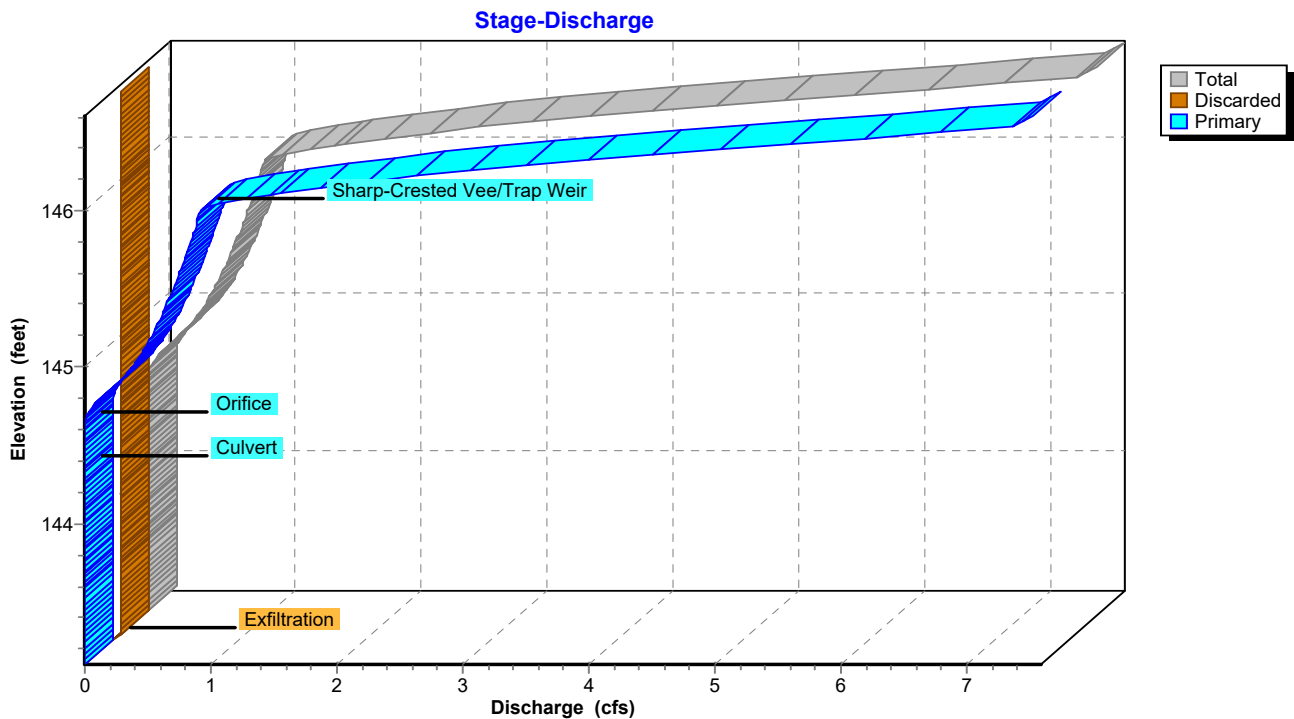
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Pond S-1: Subsurface Infiltration System



Pond S-1: Subsurface Infiltration System

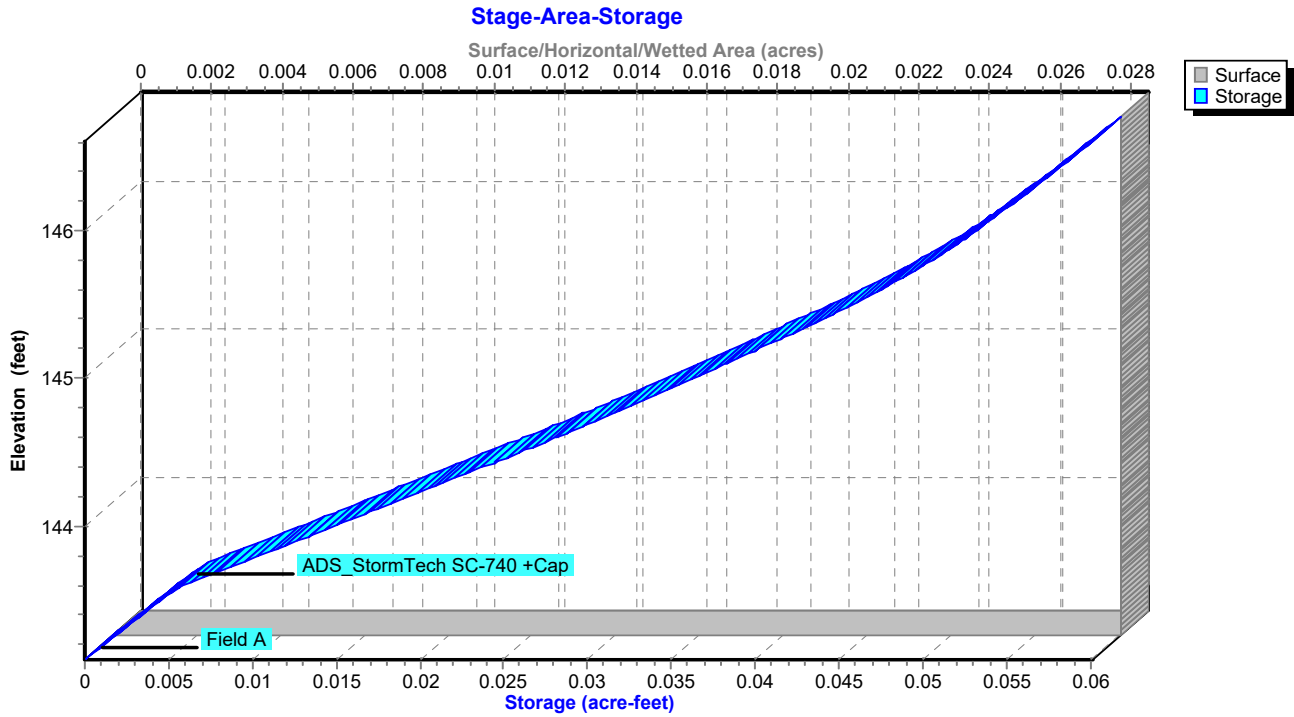


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Pond S-1: Subsurface Infiltration System



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Summary for Pond S-2: Subsurface Infiltration System

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 3.30" for 2-yr event
Inflow = 1.31 cfs @ 11.79 hrs, Volume= 0.505 af
Outflow = 1.30 cfs @ 13.98 hrs, Volume= 0.505 af, Atten= 1%, Lag= 131.4 min
Discarded = 0.12 cfs @ 7.11 hrs, Volume= 0.255 af
Primary = 1.18 cfs @ 13.98 hrs, Volume= 0.250 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 144.15' @ 13.98 hrs Surf.Area= 0.060 ac Storage= 0.107 af

Plug-Flow detention time= 134.2 min calculated for 0.504 af (100% of inflow)
Center-of-Mass det. time= 134.4 min (905.0 - 770.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	141.50'	0.054 af	25.25"W x 103.30"L x 3.50"H Field A 0.210 af Overall - 0.074 af Embedded = 0.136 af x 40.0% Voids
#2A	142.00'	0.074 af	ADS_StormTech SC-740 +Cap x 70 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 70 Chambers in 5 Rows
		0.128 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.04'	12.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.04' / 142.29' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	143.14'	5.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	144.40'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	141.50'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 7.11 hrs HW=141.54' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=1.18 cfs @ 13.98 hrs HW=144.15' (Free Discharge)
↑**1=Culvert** (Passes 1.18 cfs of 2.96 cfs potential flow)
↑**2=Orifice** (Orifice Controls 1.18 cfs @ 4.32 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-2: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

14 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 101.30' Row Length +12.0" End Stone x 2 = 103.30' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

70 Chambers x 45.9 cf = 3,215.8 cf Chamber Storage

9,128.8 cf Field - 3,215.8 cf Chambers = 5,913.0 cf Stone x 40.0% Voids = 2,365.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,581.0 cf = 0.128 af

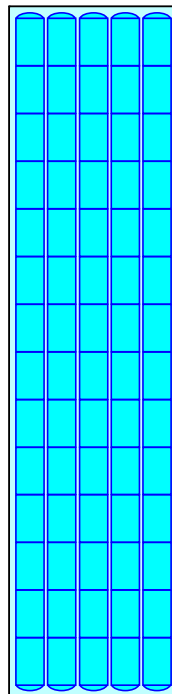
Overall Storage Efficiency = 61.1%

Overall System Size = 103.30' x 25.25' x 3.50'

70 Chambers

338.1 cy Field

219.0 cy Stone

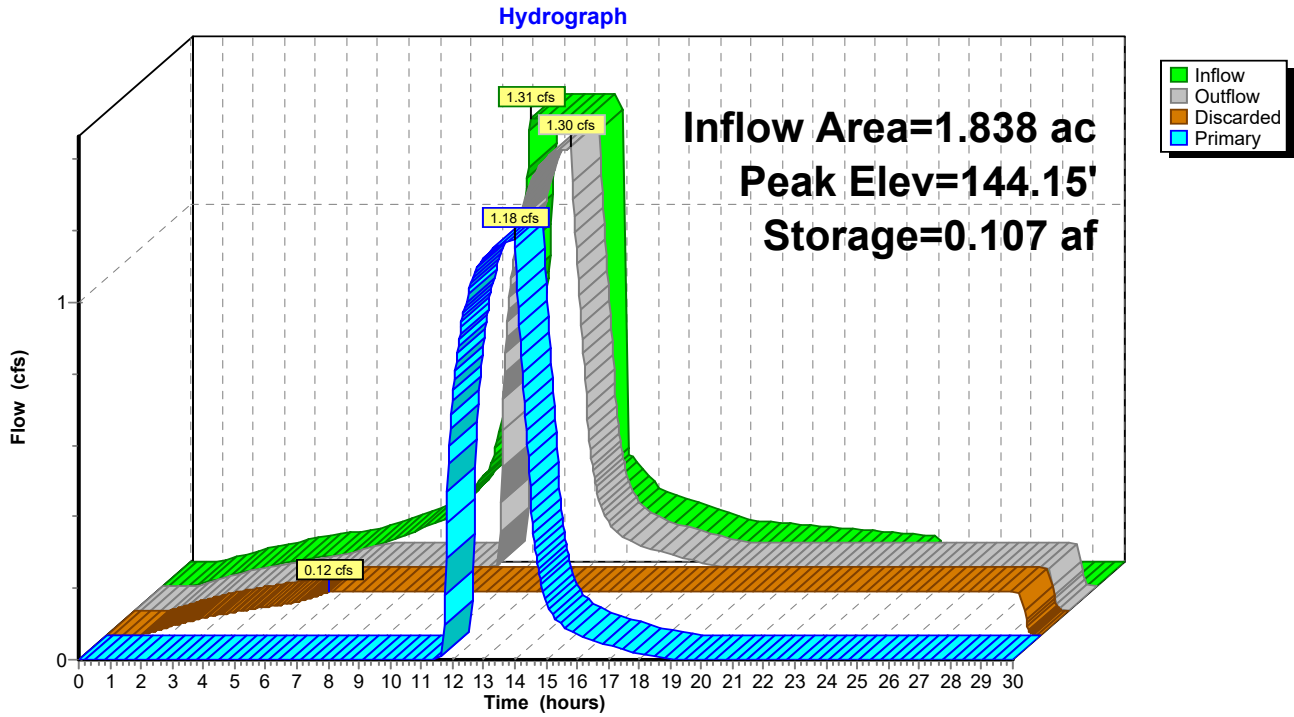


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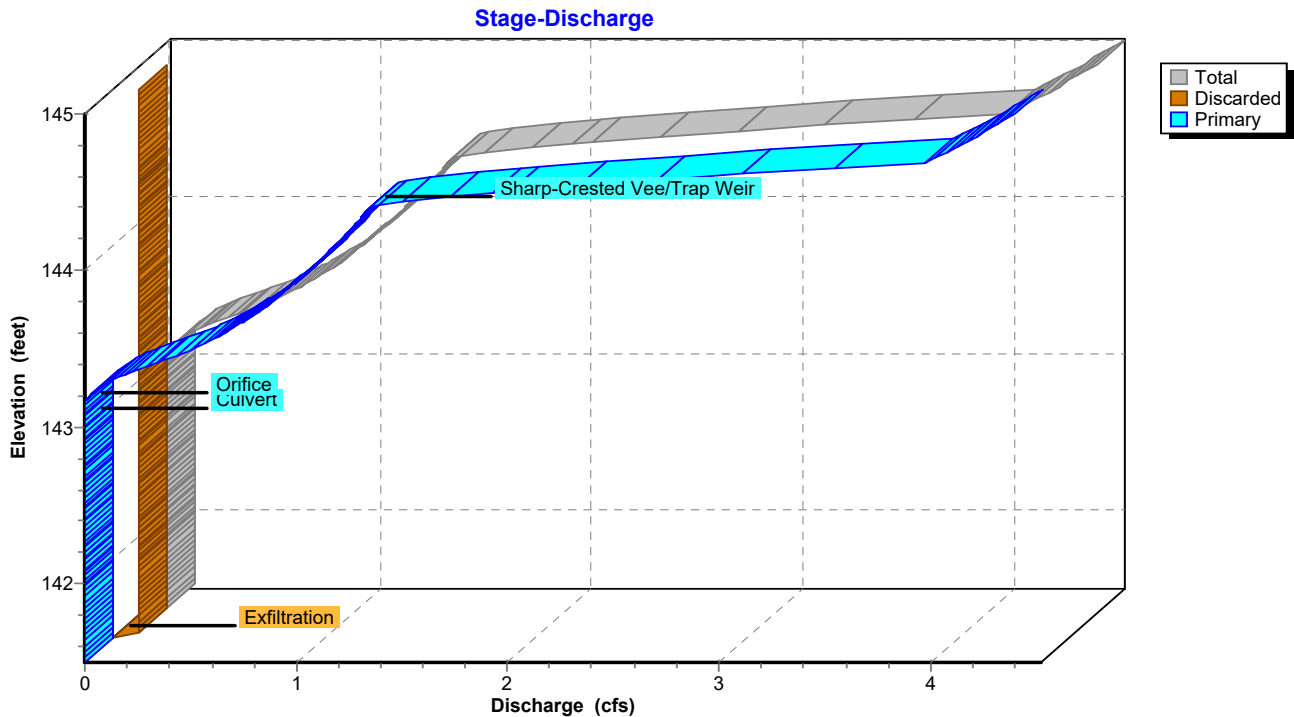
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Pond S-2: Subsurface Infiltration System



Pond S-2: Subsurface Infiltration System

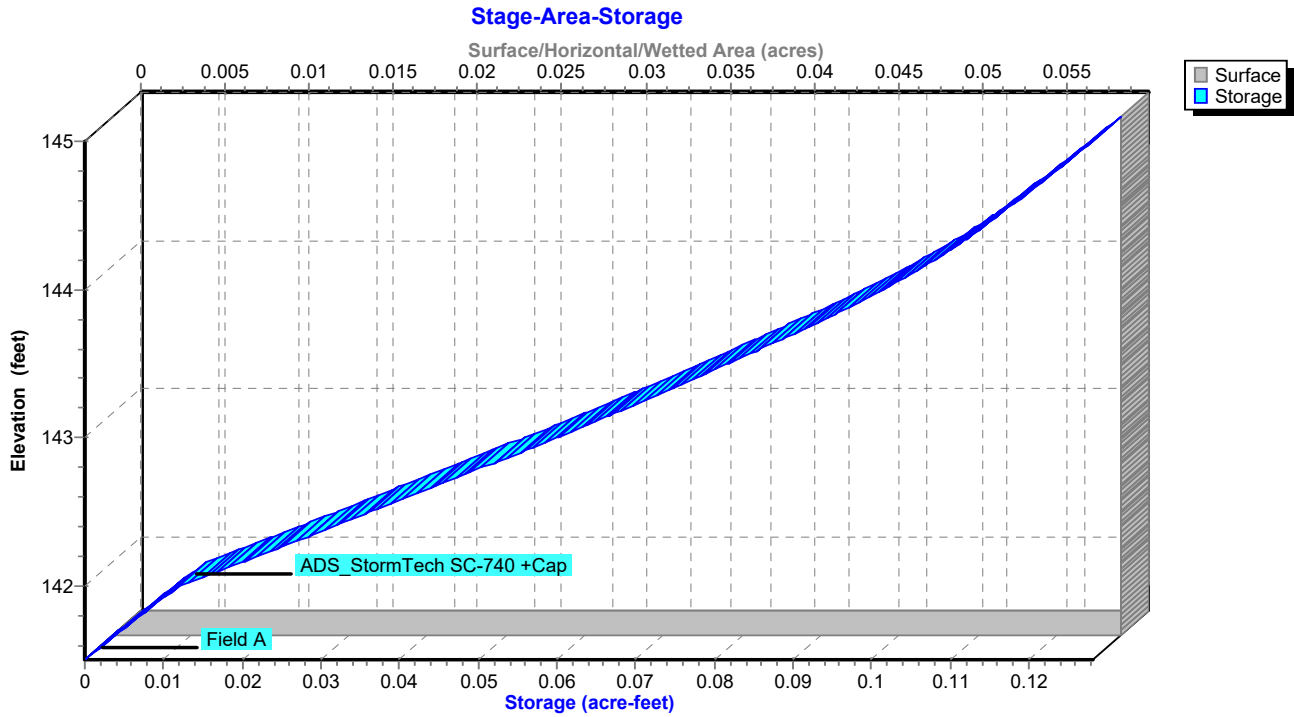


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Pond S-2: Subsurface Infiltration System



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Summary for Pond S-3: Subsurface Infiltration System

Inflow Area = 1.375 ac, 64.06% Impervious, Inflow Depth = 2.41" for 2-yr event
Inflow = 3.87 cfs @ 12.13 hrs, Volume= 0.276 af
Outflow = 1.54 cfs @ 12.27 hrs, Volume= 0.276 af, Atten= 60%, Lag= 8.3 min
Discarded = 0.16 cfs @ 10.65 hrs, Volume= 0.191 af
Primary = 1.38 cfs @ 12.27 hrs, Volume= 0.085 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 138.50' @ 12.27 hrs Surf.Area= 0.081 ac Storage= 0.081 af

Plug-Flow detention time= 83.0 min calculated for 0.276 af (100% of inflow)
Center-of-Mass det. time= 82.9 min (876.1 - 793.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	137.00'	0.073 af	25.25"W x 138.90'L x 3.50'H Field A 0.282 af Overall - 0.100 af Embedded = 0.182 af x 40.0% Voids
#2A	137.50'	0.100 af	ADS_StormTech SC-740 +Cap x 95 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 95 Chambers in 5 Rows
		0.173 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	137.90'	18.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 137.90' / 137.53' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	137.92'	7.0" Vert. Orifice X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	139.90'	5.0' long Weir Wall Cv= 2.62 (C= 3.28)
#4	Discarded	137.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 10.65 hrs HW=137.04' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=1.38 cfs @ 12.27 hrs HW=138.50' (Free Discharge)
↑**1=Culvert** (Barrel Controls 1.38 cfs @ 3.11 fps)
↑**2=Orifice** (Passes 1.38 cfs of 2.07 cfs potential flow)
↑**3=Weir Wall** (Controls 0.00 cfs)

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Pond S-3: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

19 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 136.90' Row Length +12.0" End Stone x 2 = 138.90' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

95 Chambers x 45.9 cf = 4,364.3 cf Chamber Storage

12,275.0 cf Field - 4,364.3 cf Chambers = 7,910.7 cf Stone x 40.0% Voids = 3,164.3 cf Stone Storage

Chamber Storage + Stone Storage = 7,528.6 cf = 0.173 af

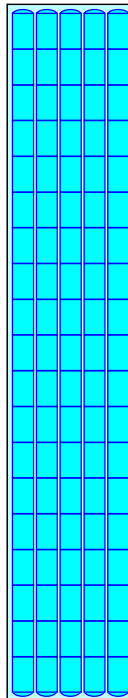
Overall Storage Efficiency = 61.3%

Overall System Size = 138.90' x 25.25' x 3.50'

95 Chambers

454.6 cy Field

293.0 cy Stone

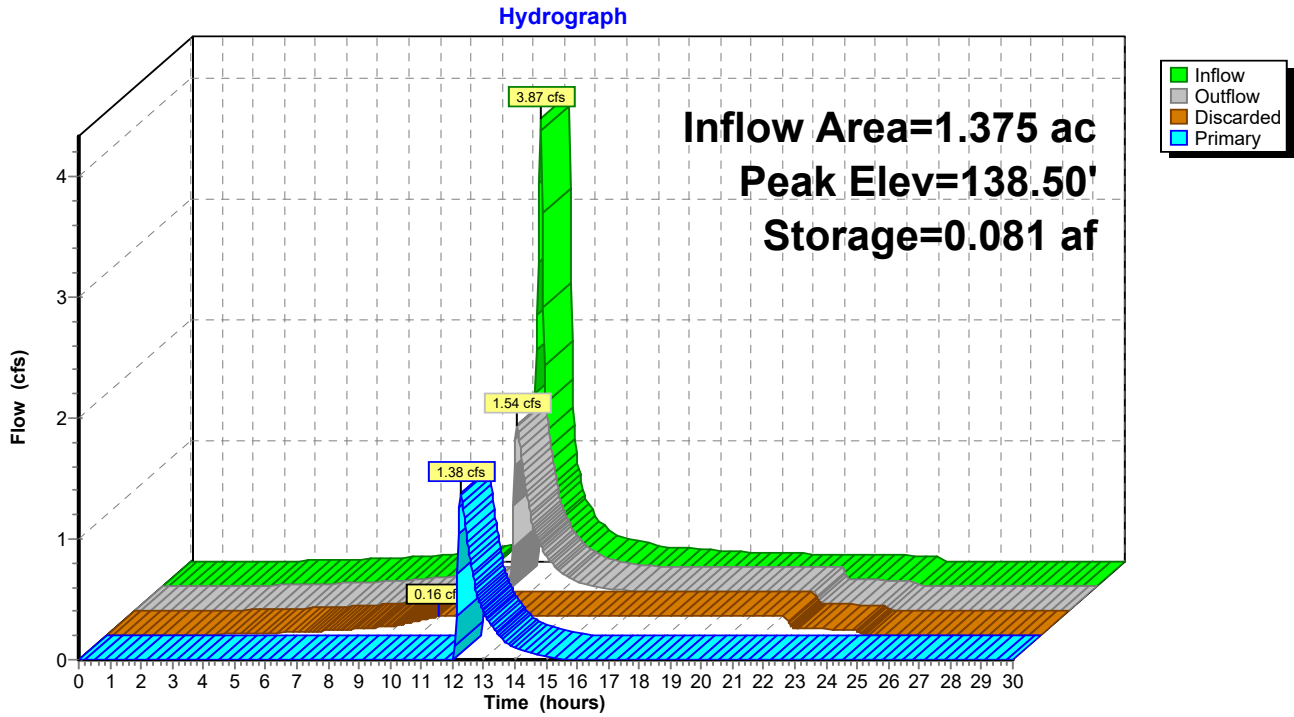


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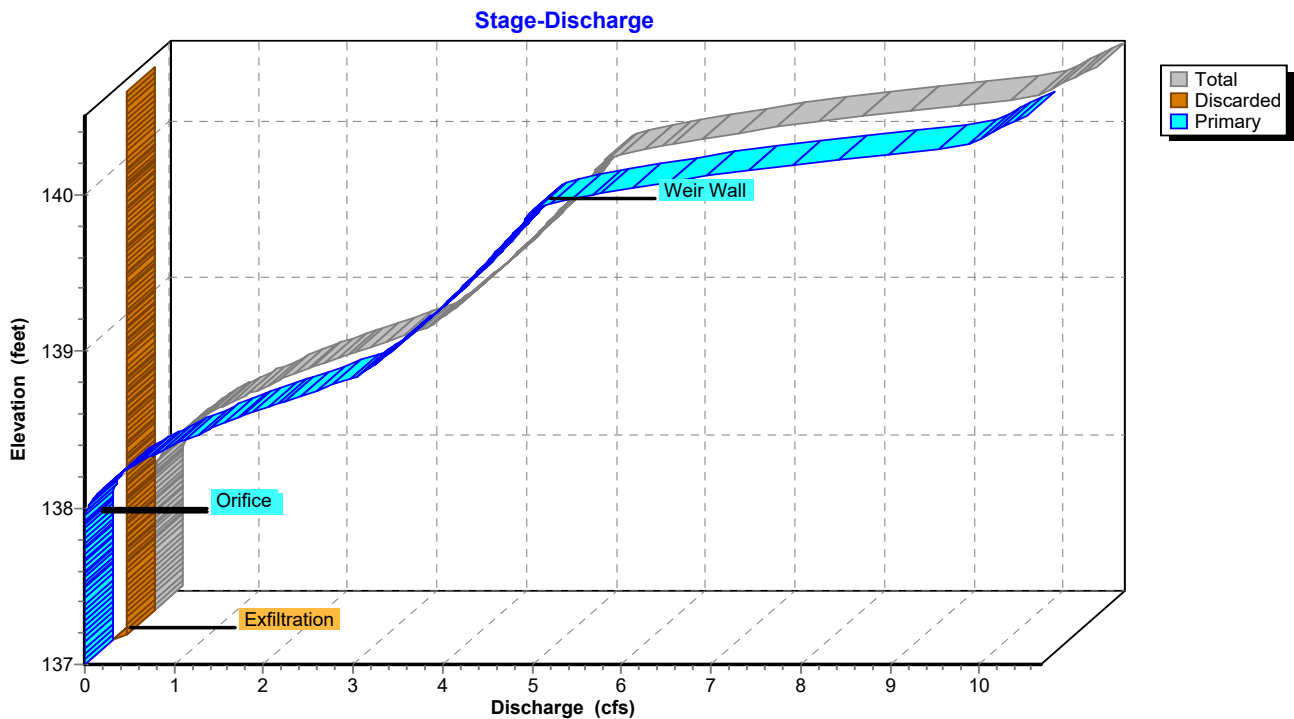
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Pond S-3: Subsurface Infiltration System



Pond S-3: Subsurface Infiltration System

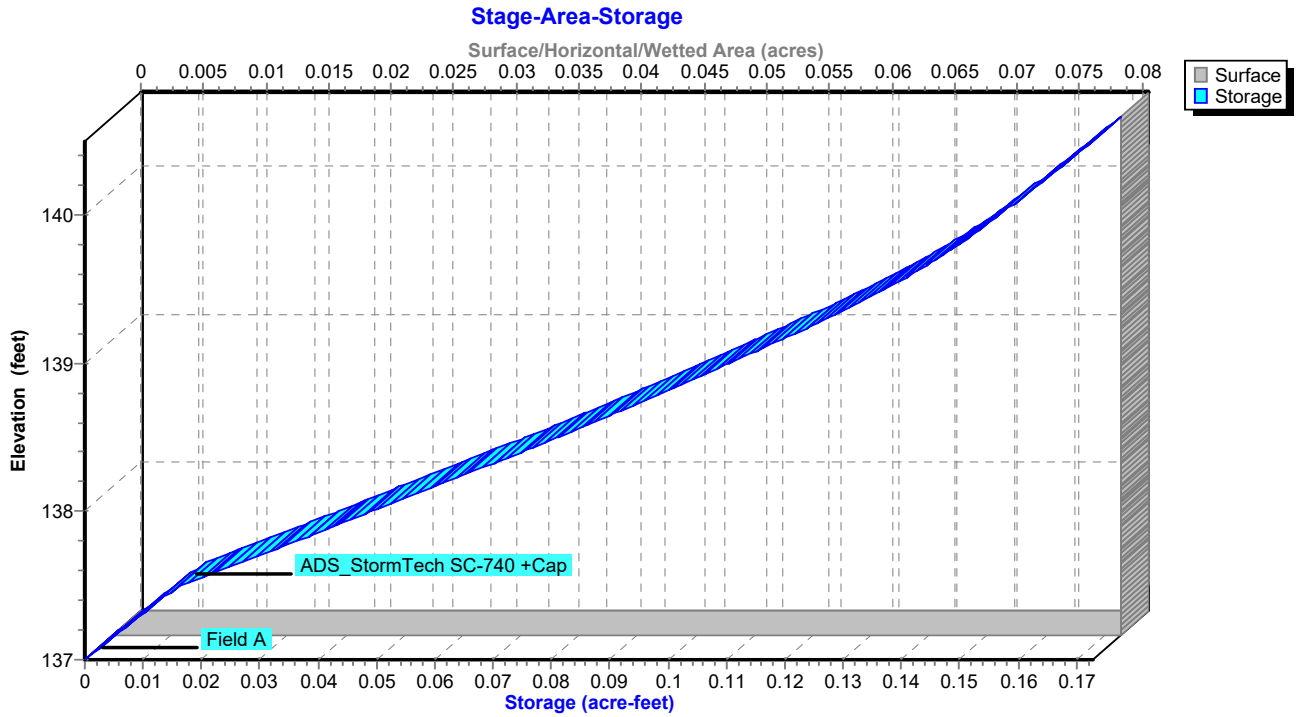


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Pond S-3: Subsurface Infiltration System



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Summary for Subcatchment PR-1: CCB 14

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 5.04"
 Routed to Reach R2 : Site Stormwater System

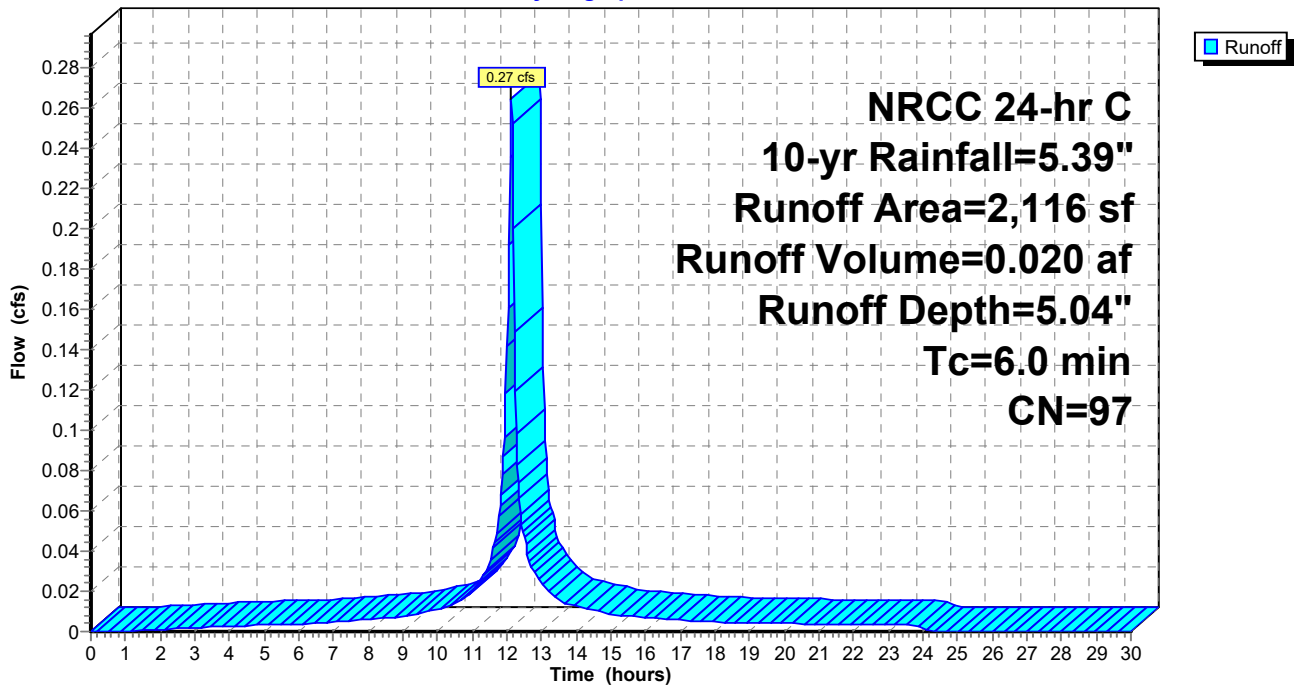
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
2,045	98	Paved parking, HSG D
* 71	79	Landscaping, Good, HSG D
2,116	97	Weighted Average
71		3.36% Pervious Area
2,045		96.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-1: CCB 14

Hydrograph



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Summary for Subcatchment PR-10: CCB 28

Runoff = 1.12 cfs @ 12.13 hrs, Volume= 0.083 af, Depth= 4.81"
 Routed to Reach R2 : Site Stormwater System

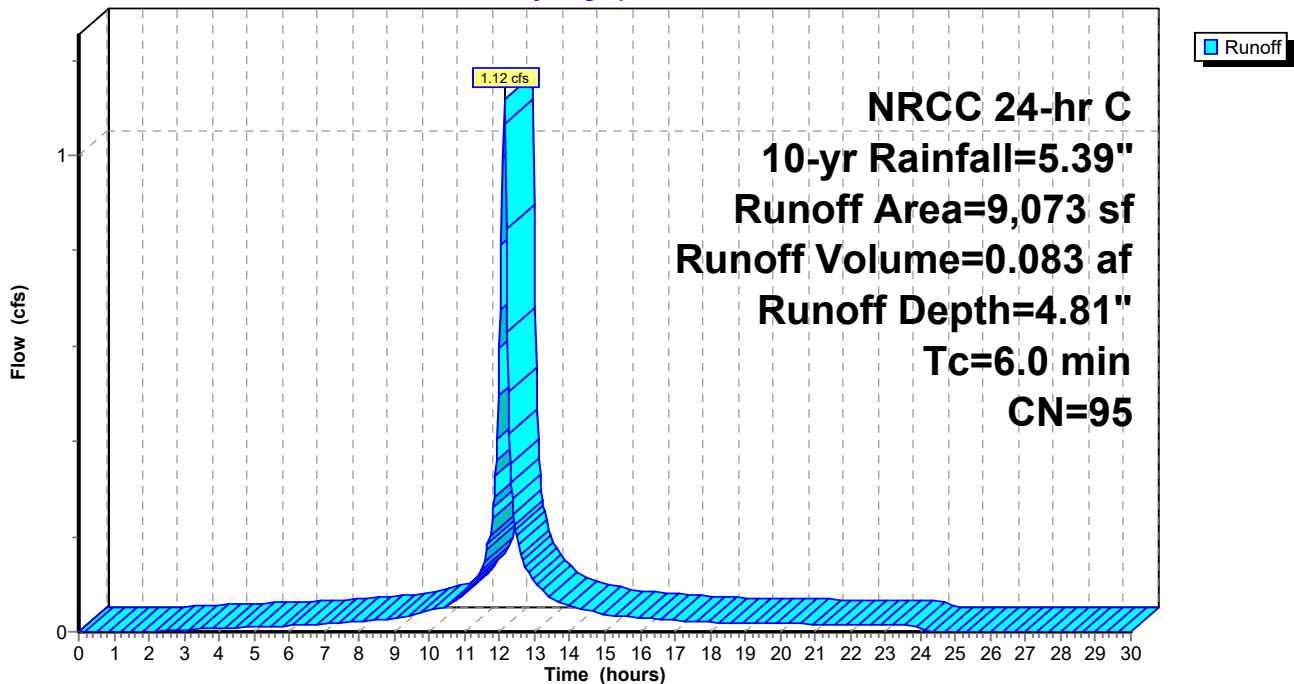
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
7,450	98	Paved parking, HSG D
440	80	>75% Grass cover, Good, HSG D
* 1,183	79	Landscaping, Good, HSG D
9,073	95	Weighted Average
1,623		17.89% Pervious Area
7,450		82.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-10: CCB 28

Hydrograph



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Summary for Subcatchment PR-11: Building Roof

Runoff = 10.09 cfs @ 12.13 hrs, Volume= 0.789 af, Depth= 5.15"
Routed to Reach R1 : Roof Leader

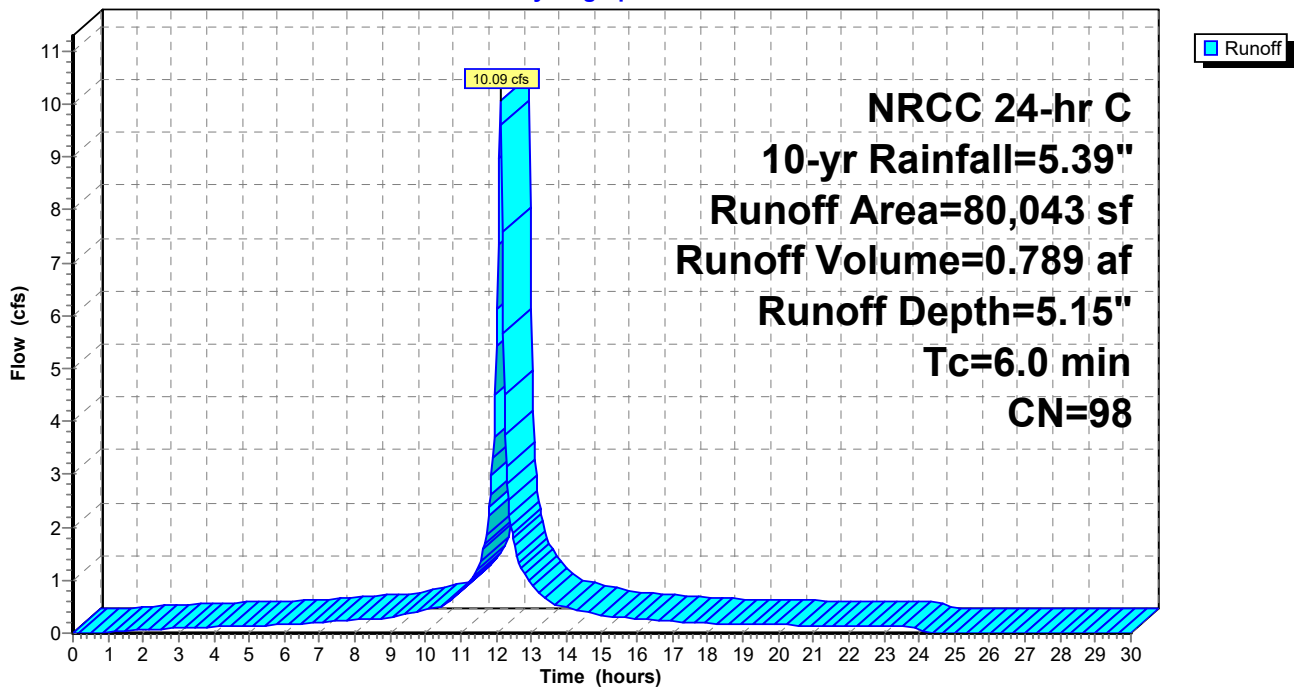
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
80,043	98	Roofs, HSG D
80,043		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-11: Building Roof

Hydrograph



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Summary for Subcatchment PR-12: CCB 29

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.009 af, Depth= 5.15"
Routed to Reach R2 : Site Stormwater System

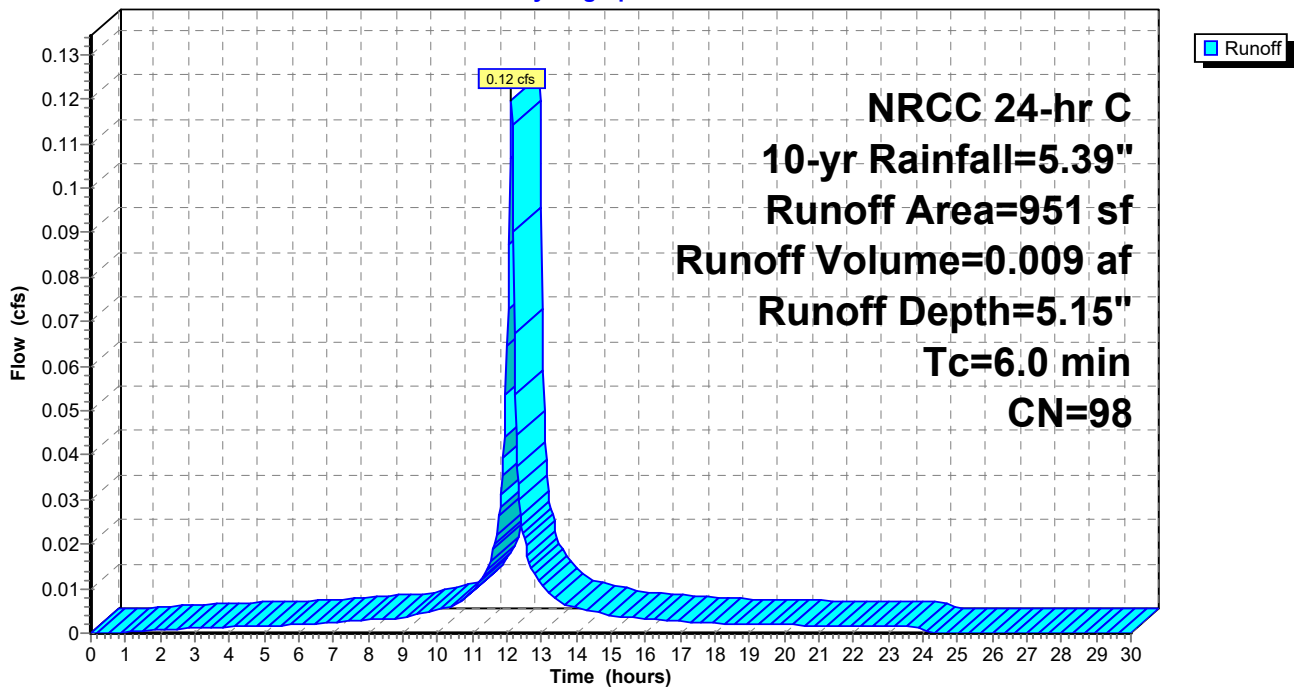
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
951	98	Paved parking, HSG D
951		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-12: CCB 29

Hydrograph



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Summary for Subcatchment PR-13: CCB 30

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 5.15"
Routed to Reach R2 : Site Stormwater System

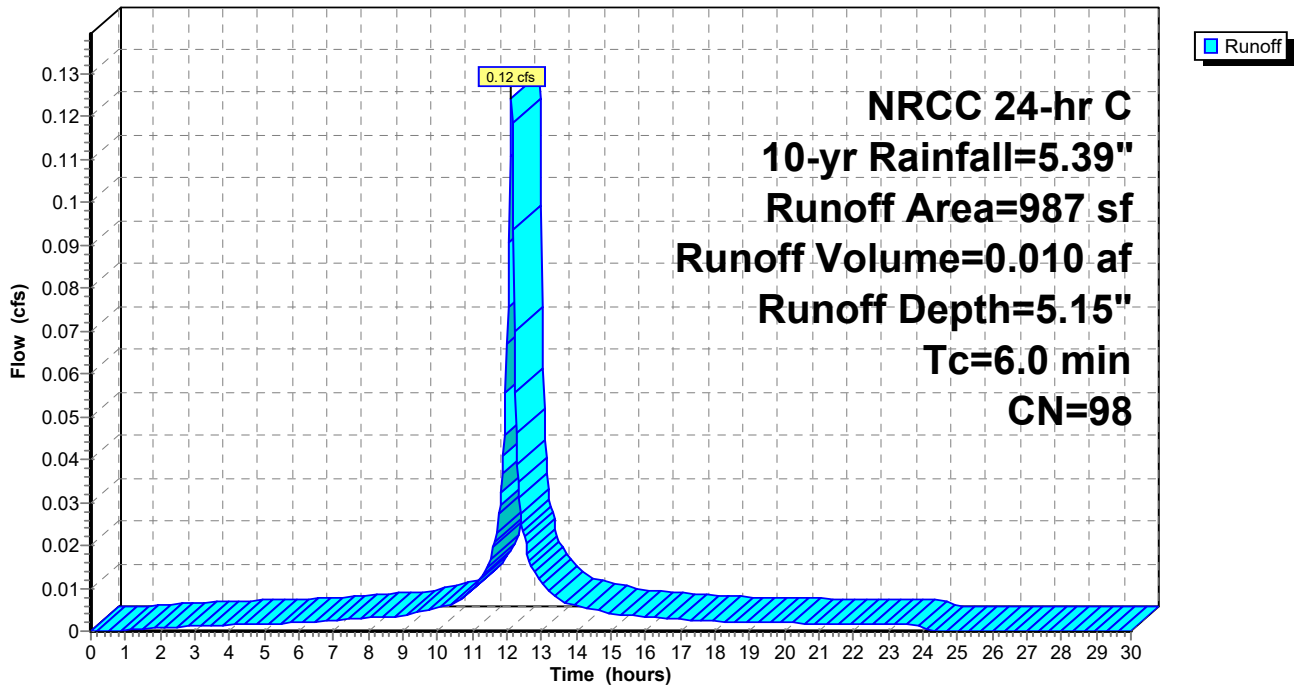
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
987	98	Paved parking, HSG D
987		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-13: CCB 30

Hydrograph



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Summary for Subcatchment PR-14: CLCB-10

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 0.016 af, Depth= 4.92"
Routed to Reach R3 : East Stormwater System

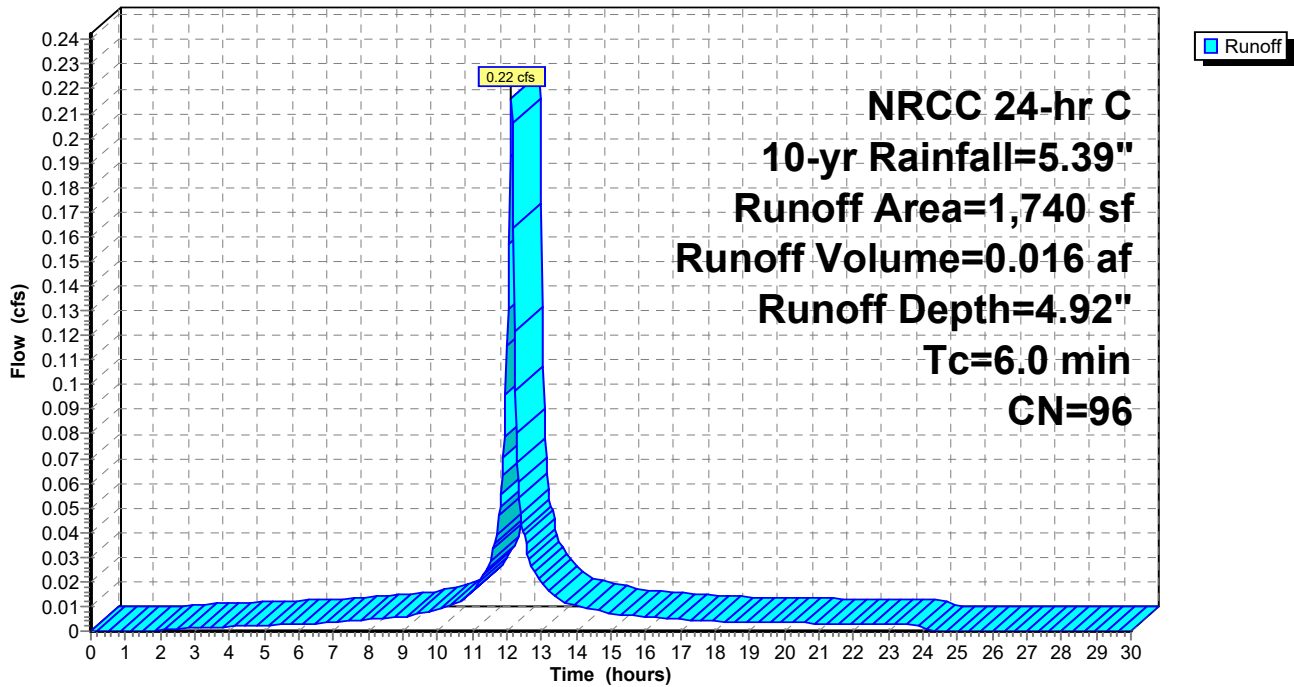
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
* 1,740	96	Concrete paver, HSG D
1,740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-14: CLCB-10

Hydrograph



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Summary for Subcatchment PR-15: CLCB-09

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 0.017 af, Depth= 4.92"
Routed to Reach R3 : East Stormwater System

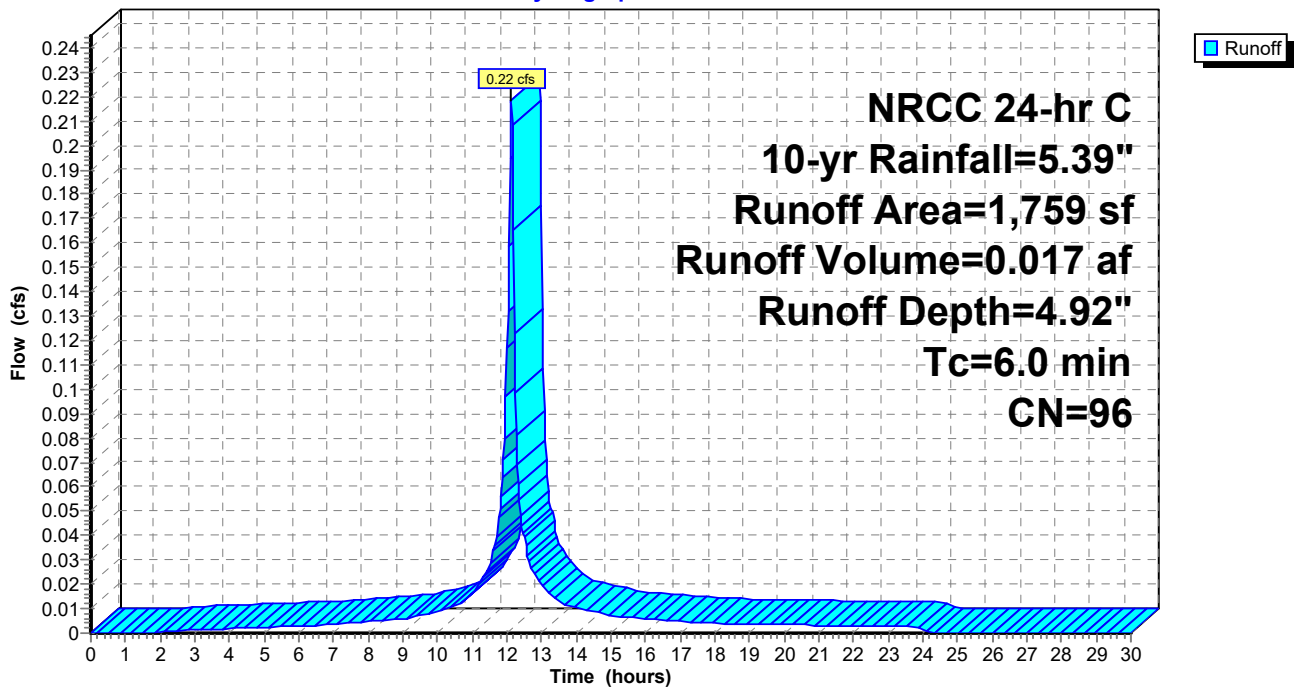
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
* 1,759	96	Pevious paver, HSG D
1,759		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-15: CLCB-09

Hydrograph



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Summary for Subcatchment PR-16: East rooftop

Runoff = 0.41 cfs @ 12.13 hrs, Volume= 0.032 af, Depth= 5.15"
Routed to Pond AP-2 : Front Lawn Rain Garden

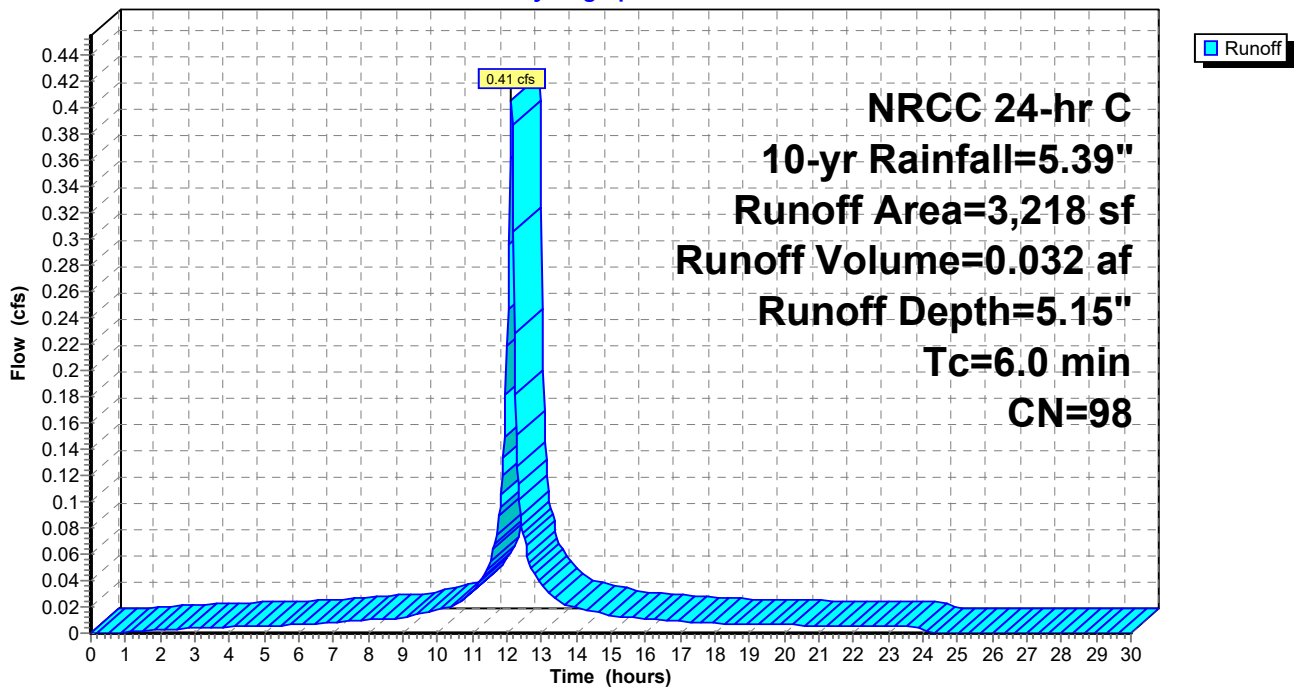
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
3,218	98	Roofs, HSG D
3,218		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-16: East rooftop

Hydrograph



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Summary for Subcatchment PR-17: Front Lawn

Runoff = 1.66 cfs @ 12.13 hrs, Volume= 0.111 af, Depth= 3.33"
 Routed to Pond AP-2 : Front Lawn Rain Garden

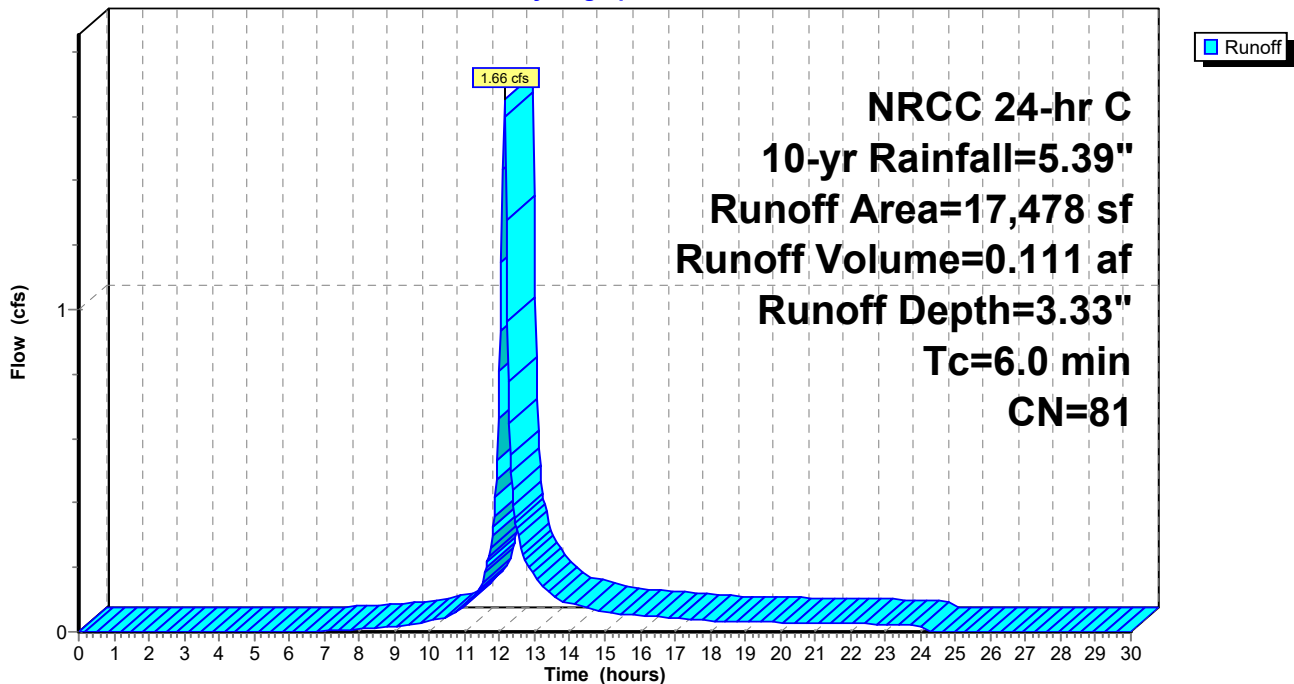
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
1,883	98	Paved parking, HSG D
6,950	80	>75% Grass cover, Good, HSG D
* 8,645	79	Landscaping, Good, HSG D
17,478	81	Weighted Average
15,595		89.23% Pervious Area
1,883		10.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-17: Front Lawn

Hydrograph



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Summary for Subcatchment PR-18: CCB-08

Runoff = 0.33 cfs @ 12.13 hrs, Volume= 0.023 af, Depth= 4.04"
 Routed to Reach R3 : East Stormwater System

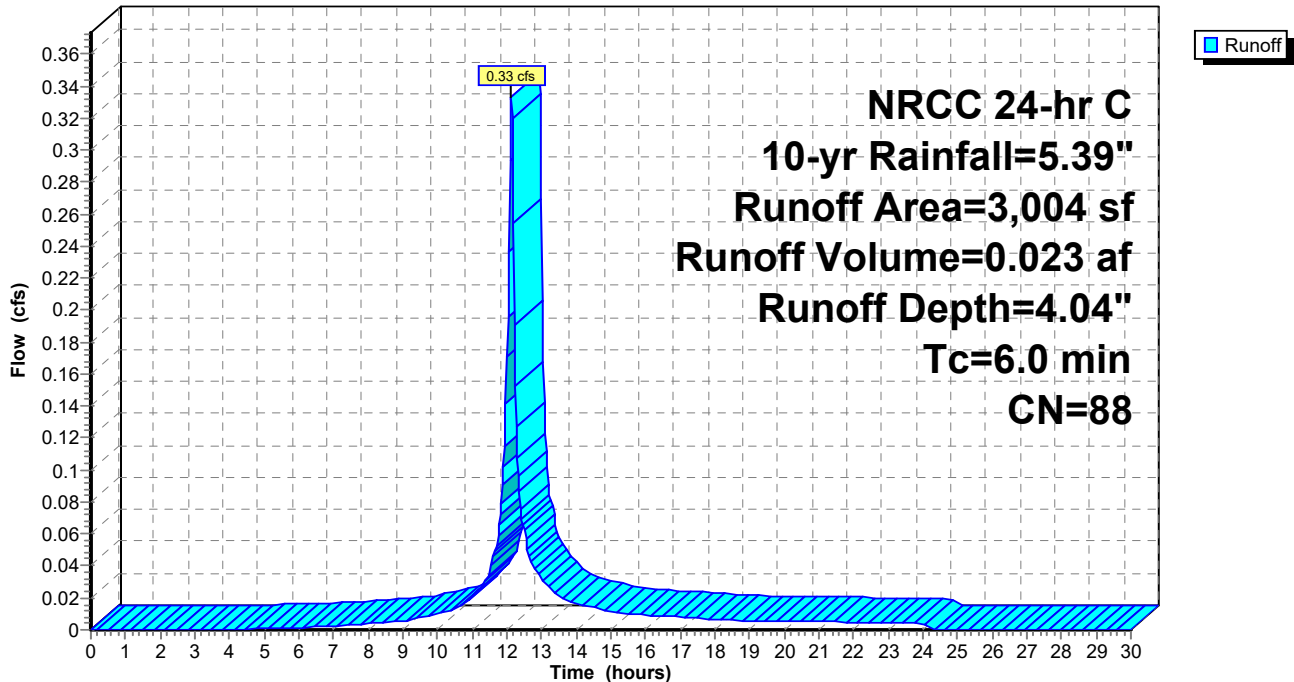
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
1,482	98	Paved parking, HSG D
192	80	>75% Grass cover, Good, HSG D
* 1,330	79	Landscaping, Good, HSG D
3,004	88	Weighted Average
1,522		50.67% Pervious Area
1,482		49.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-18: CCB-08

Hydrograph



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Summary for Subcatchment PR-19: CCB-07

Runoff = 0.13 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 5.15"
Routed to Reach R3 : East Stormwater System

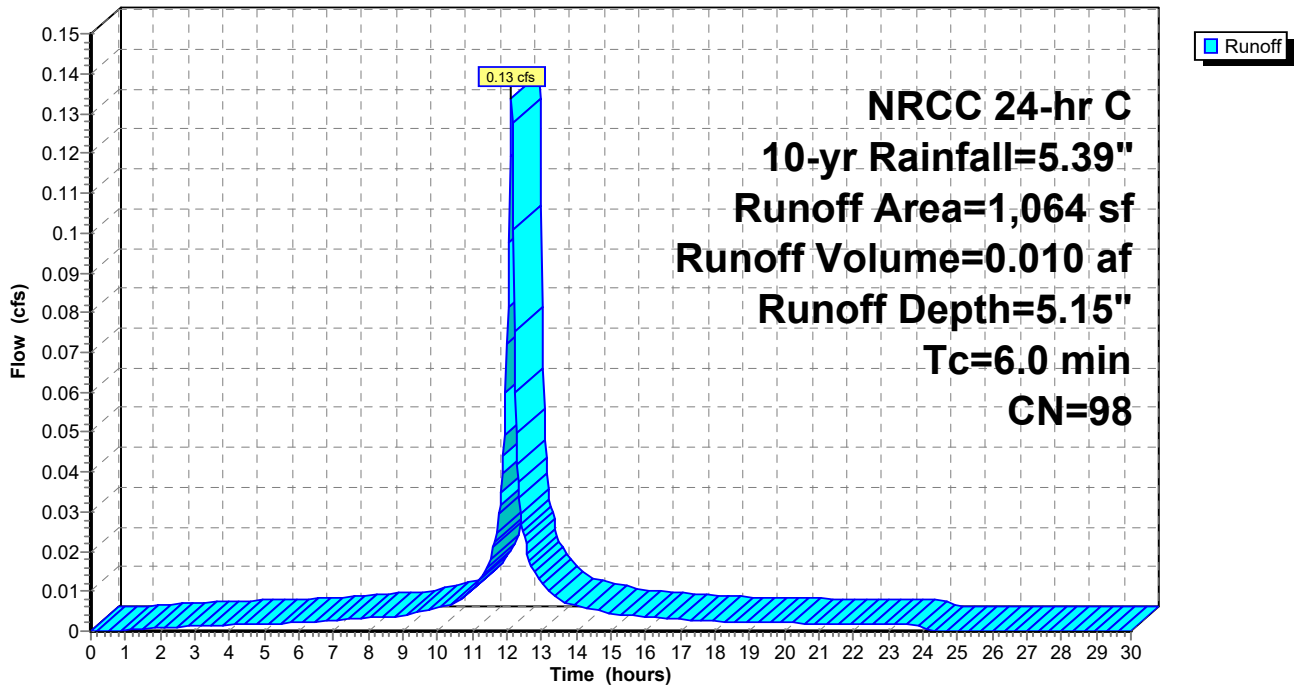
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
1,064	98	Paved parking, HSG D
1,064		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-19: CCB-07

Hydrograph



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Summary for Subcatchment PR-2: CCB 10

Runoff = 1.06 cfs @ 12.13 hrs, Volume= 0.076 af, Depth= 4.47"
 Routed to Reach R2 : Site Stormwater System

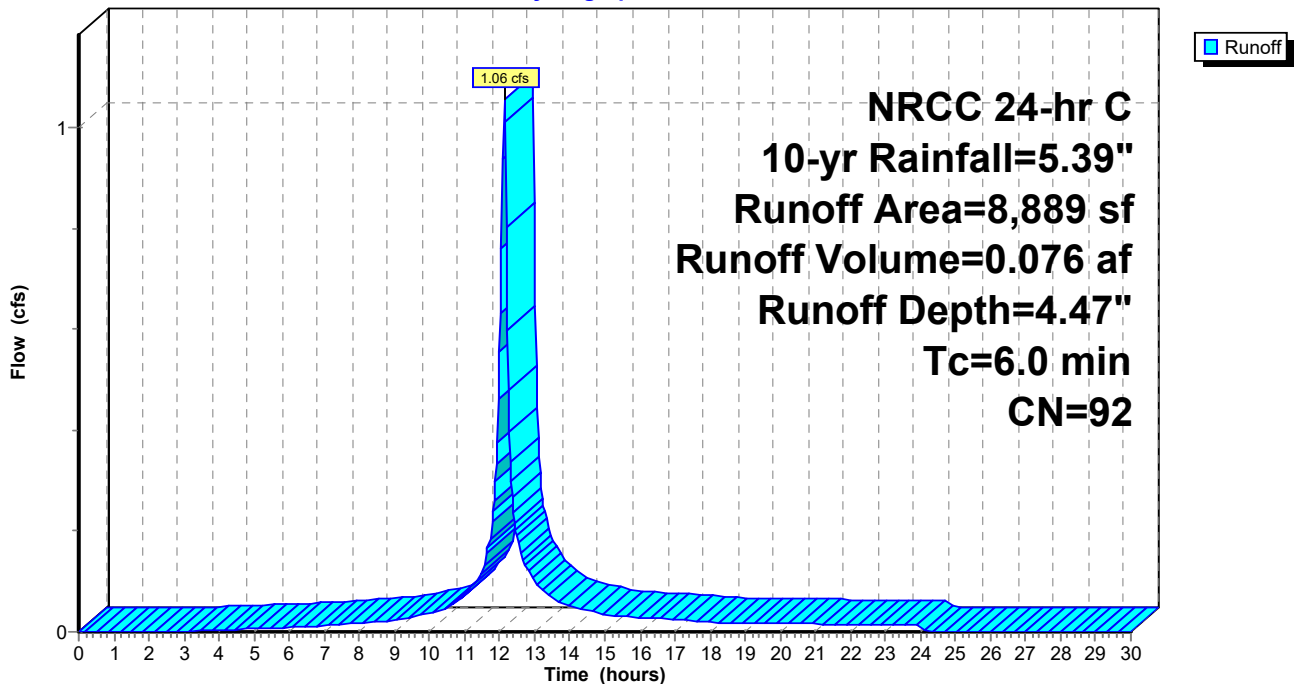
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

	Area (sf)	CN	Description
*	6,733	98	Paved parking, HSG C
*	1,772	72	Landscaping, Good, HSG C
	384	74	>75% Grass cover, Good, HSG C
	8,889	92	Weighted Average
	2,156		24.25% Pervious Area
	6,733		75.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-2: CCB 10

Hydrograph



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Summary for Subcatchment PR-20: South of entrance drive

Runoff = 0.57 cfs @ 12.13 hrs, Volume= 0.038 af, Depth= 3.14"
 Routed to Pond AP-4 : Landscaped Area

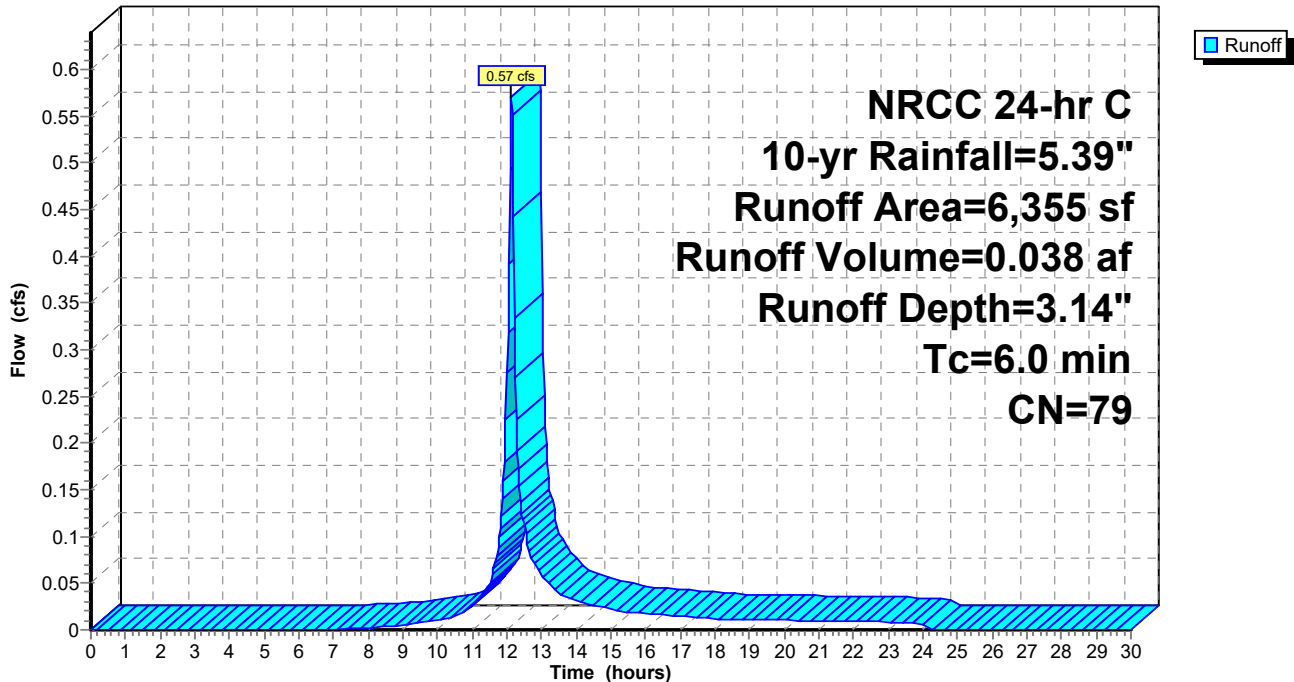
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
93	98	Paved parking, HSG D
755	80	>75% Grass cover, Good, HSG D
* 5,507	79	Landscaping, Good, HSG D
6,355	79	Weighted Average
6,262		98.54% Pervious Area
93		1.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-20: South of entrance drive

Hydrograph



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Summary for Subcatchment PR-21: Danbury Rd

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 0.011 af, Depth= 5.15"
Routed to Pond AP-3 : Danbury Road

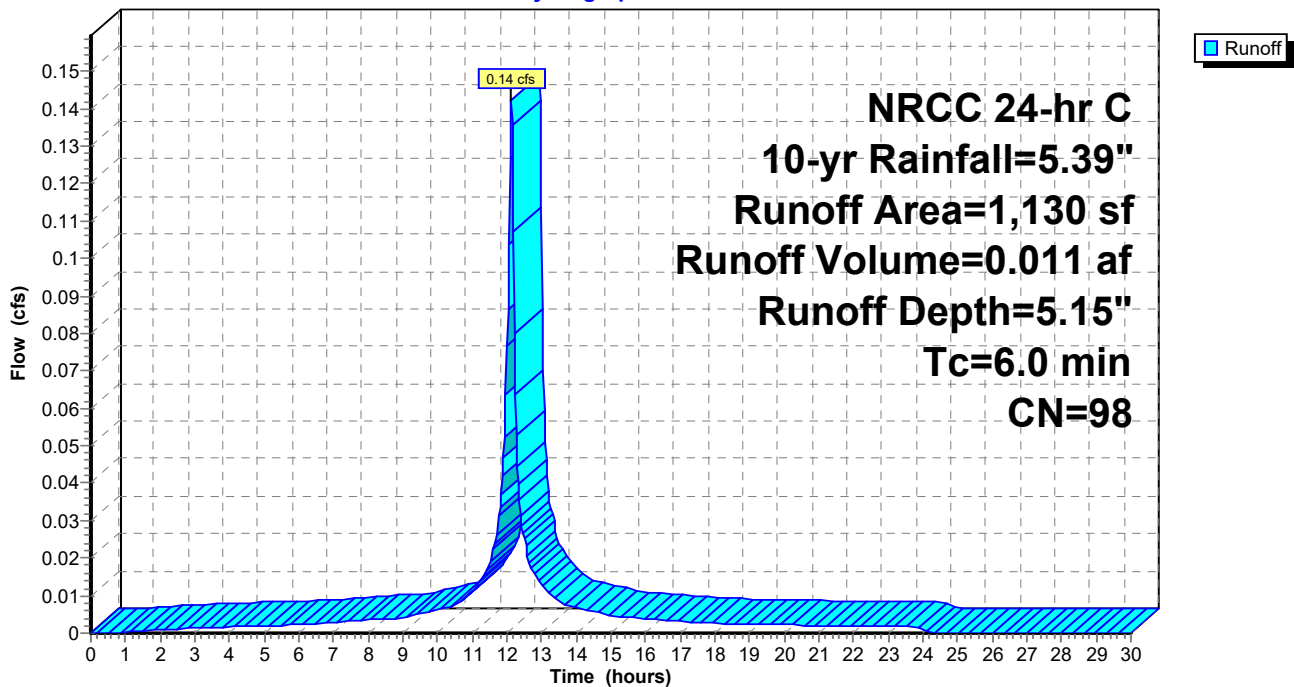
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
1,130	98	Paved parking, HSG D
1,130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-21: Danbury Rd

Hydrograph



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Summary for Subcatchment PR-3: CCB 07

Runoff = 0.64 cfs @ 12.13 hrs, Volume= 0.048 af, Depth= 4.92"
Routed to Reach R2 : Site Stormwater System

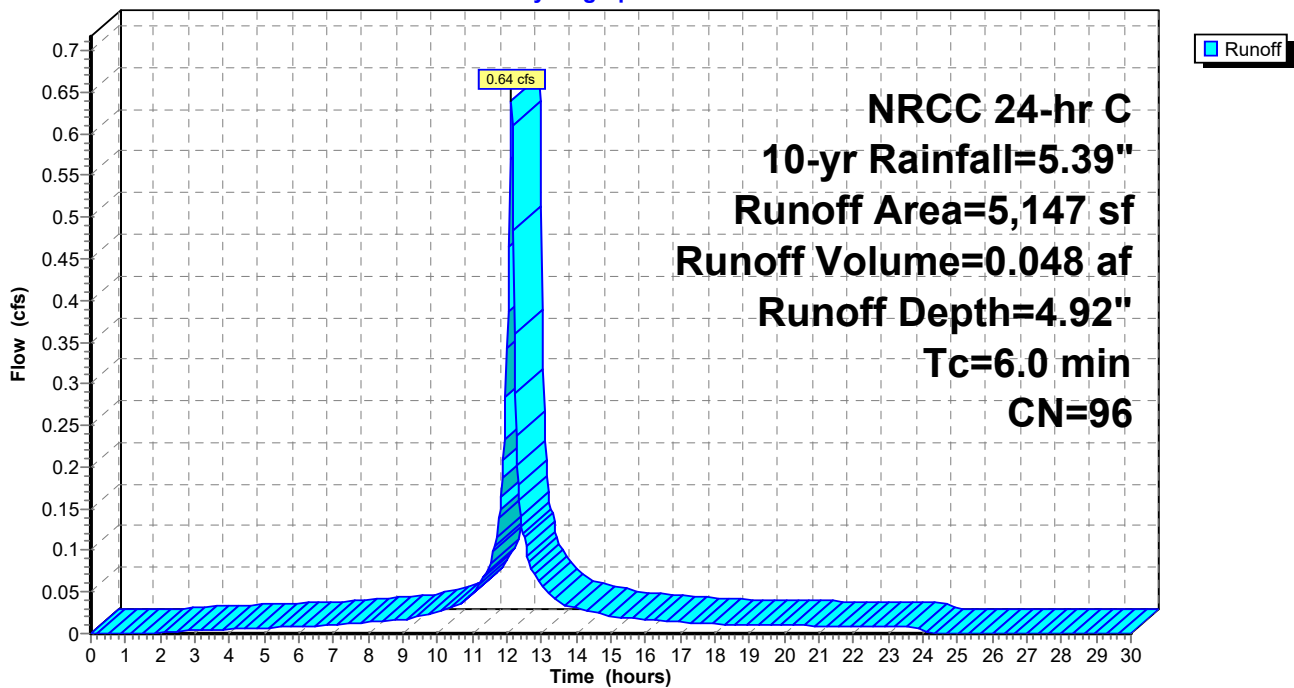
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

	Area (sf)	CN	Description
*	4,715	98	Paved parking, HSG C
*	432	72	Landscaping, Good, HSG C
	5,147	96	Weighted Average
	432		8.39% Pervious Area
	4,715		91.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-3: CCB 07

Hydrograph



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Summary for Subcatchment PR-4: CCB 06

Runoff = 0.26 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 5.04"
Routed to Reach R2 : Site Stormwater System

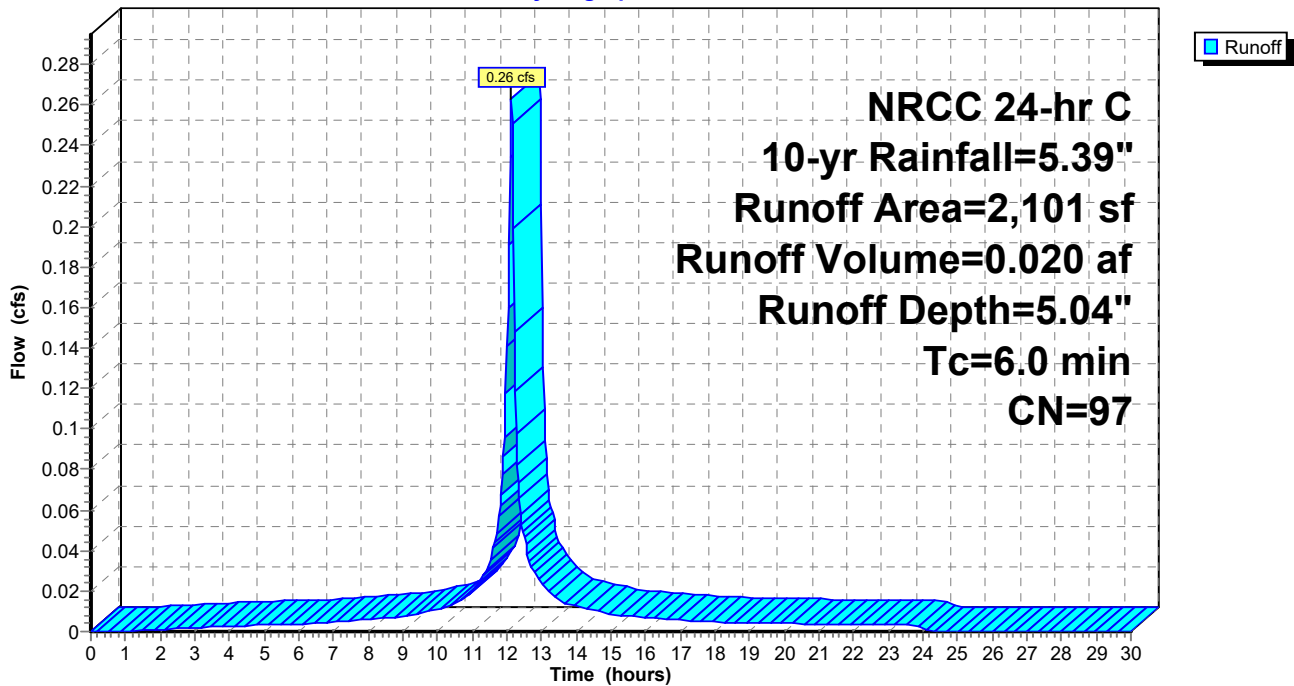
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
2,026	98	Paved parking, HSG D
* 75	79	Landscaping, Good, HSG D
2,101	97	Weighted Average
75		3.57% Pervious Area
2,026		96.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assigned minimum

Subcatchment PR-4: CCB 06

Hydrograph



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Summary for Subcatchment PR-5: South Basin

Runoff = 0.50 cfs @ 12.13 hrs, Volume= 0.034 af, Depth= 3.53"
 Routed to Pond B-1 : South Basin

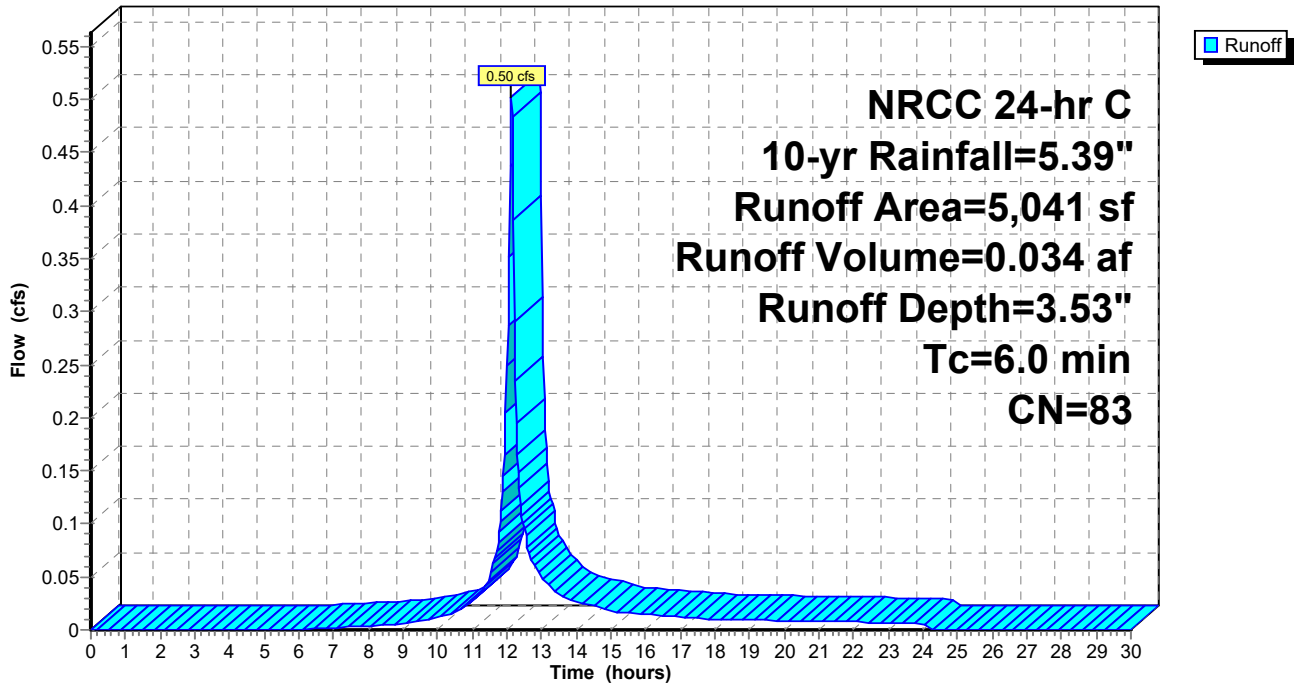
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

	Area (sf)	CN	Description
*	595	96	Permeable Paver, HSG C
*	366	96	Gravel surface, HSG C
*	2,205	72	Landscaping, Good, HSG C
*	890	98	Paved parking, HSG C
	985	80	>75% Grass cover, Good, HSG D
	5,041	83	Weighted Average
	4,151		82.34% Pervious Area
	890		17.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-5: South Basin

Hydrograph



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Summary for Subcatchment PR-6: West along river

Runoff = 1.94 cfs @ 12.13 hrs, Volume= 0.132 af, Depth= 3.63"
 Routed to Pond AP-1 : Norwalk River

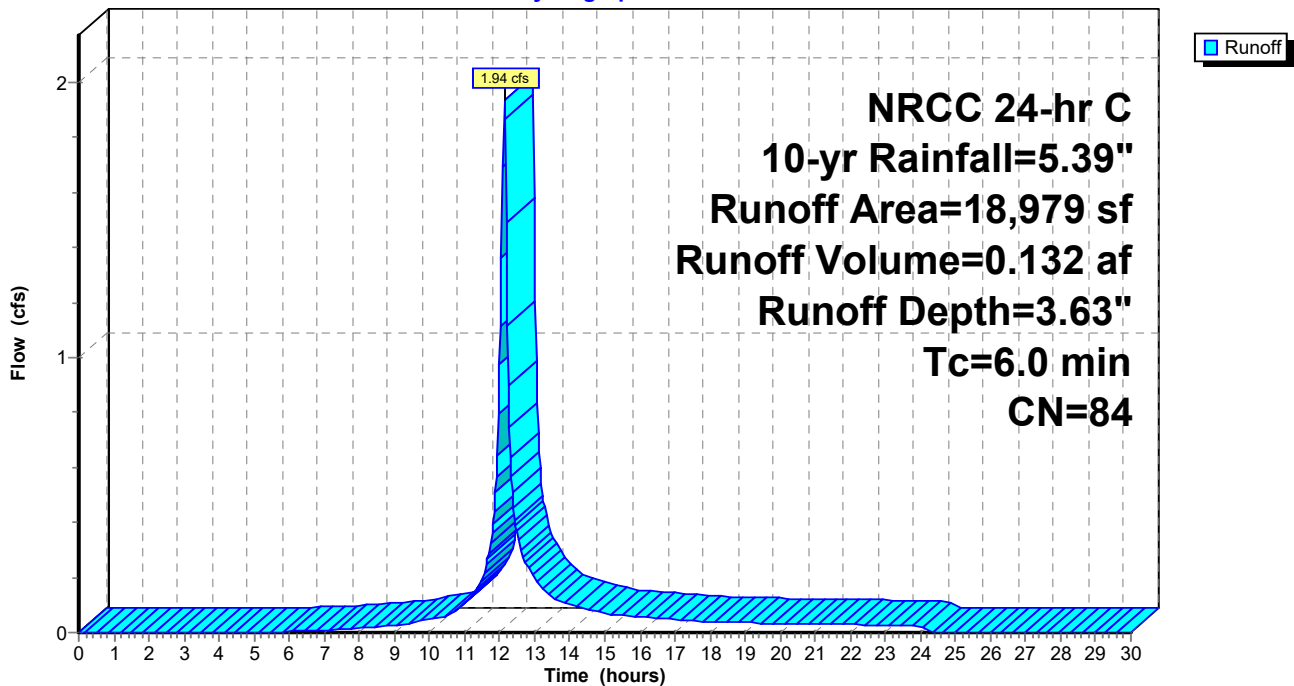
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

	Area (sf)	CN	Description
*	4,195	96	Permeable paver, HSG D
	461	96	Gravel surface, HSG D
	911	98	Paved parking, HSG D
	2,775	80	>75% Grass cover, Good, HSG D
*	6,489	79	Landscaping, Good, HSG D
	4,148	77	Woods, Good, HSG D
	18,979	84	Weighted Average
	18,068		95.20% Pervious Area
	911		4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-6: West along river

Hydrograph



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Summary for Subcatchment PR-7: North basin

Runoff = 0.68 cfs @ 12.13 hrs, Volume= 0.047 af, Depth= 3.63"
 Routed to Pond B-2 : North Basin

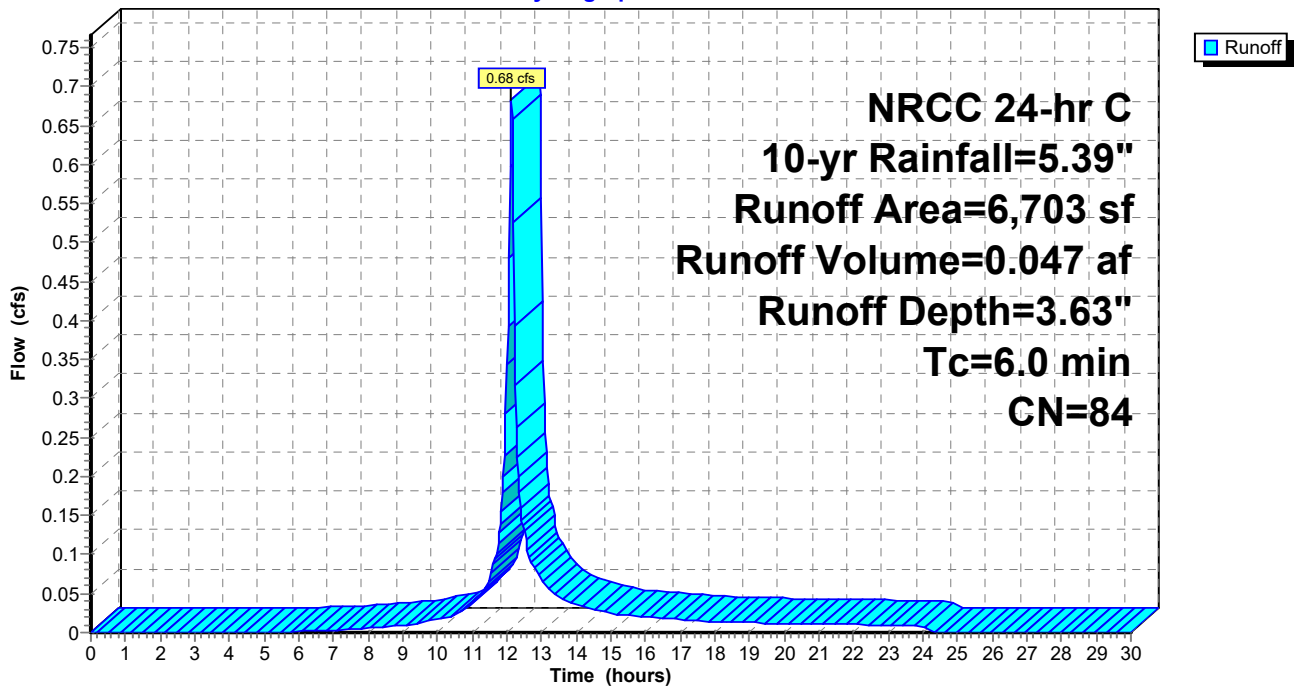
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
453	96	Gravel surface, HSG D
* 1,031	96	Permeable paver, HSG D
445	80	>75% Grass cover, Good, HSG D
* 3,601	79	Landscaping, Good, HSG D
692	77	Woods, Good, HSG D
481	98	Paved parking, HSG D
6,703	84	Weighted Average
6,222		92.82% Pervious Area
481		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7: North basin

Hydrograph



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Summary for Subcatchment PR-7B: CCB 26

Runoff = 0.53 cfs @ 12.13 hrs, Volume= 0.039 af, Depth= 4.69"
 Routed to Reach R2 : Site Stormwater System

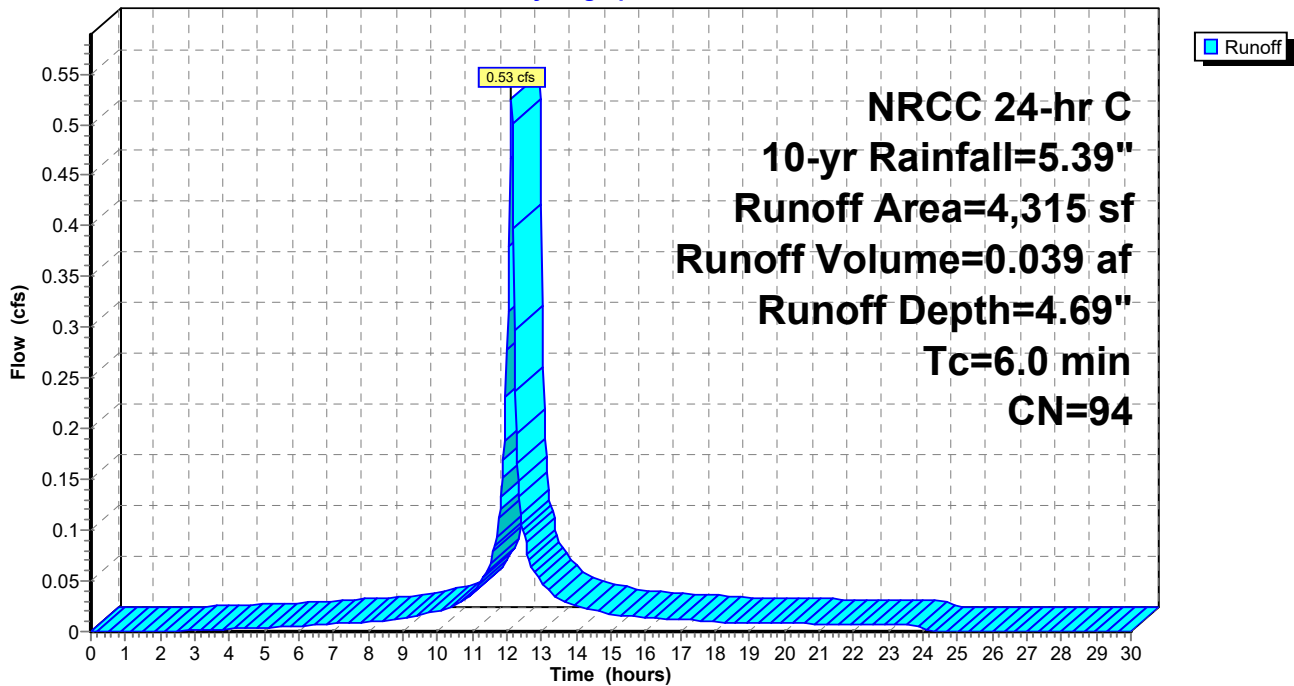
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
3,518	98	Paved parking, HSG D
* 797	79	Landscaping, Good, HSG D
4,315	94	Weighted Average
797		18.47% Pervious Area
3,518		81.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7B: CCB 26

Hydrograph



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Summary for Subcatchment PR-8: CCB 26A

Runoff = 0.78 cfs @ 12.13 hrs, Volume= 0.057 af, Depth= 4.58"
Routed to Reach R2 : Site Stormwater System

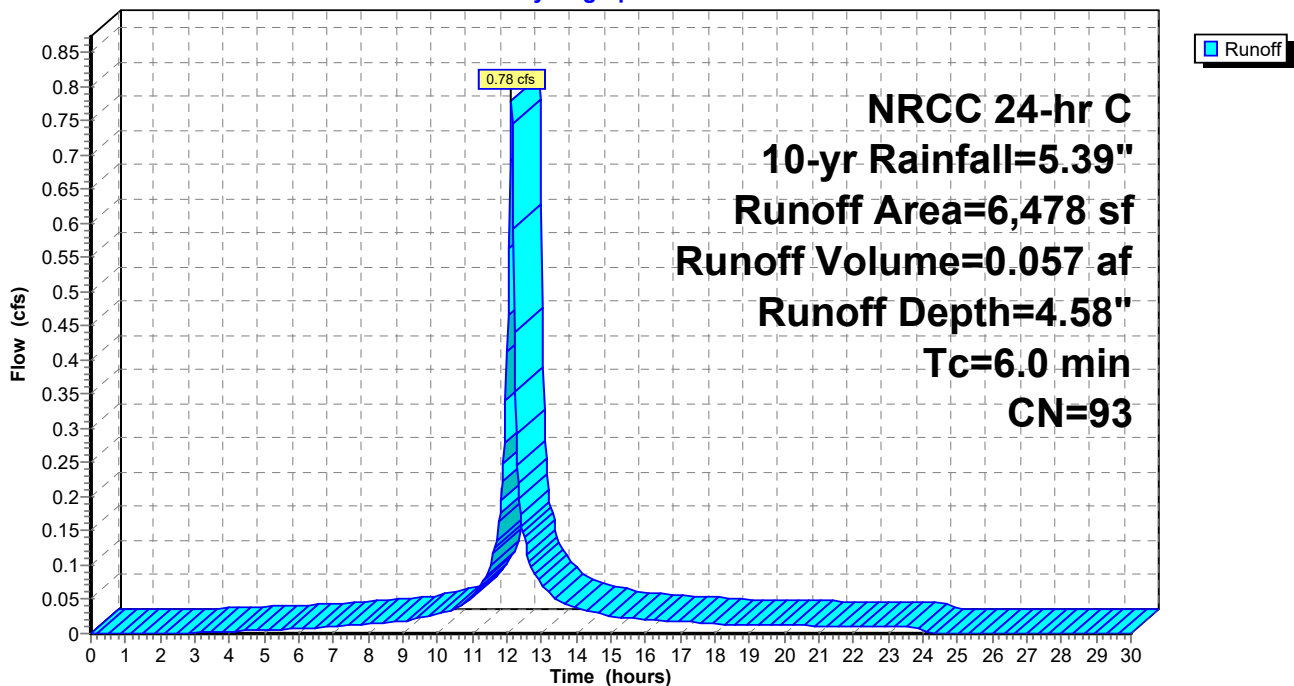
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
4,737	98	Paved parking, HSG D
* 1,741	79	Landscaping, Good, HSG D
6,478	93	Weighted Average
1,741		26.88% Pervious Area
4,737		73.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-8: CCB 26A

Hydrograph



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Summary for Subcatchment PR-9: CCB 27

Runoff = 1.40 cfs @ 12.13 hrs, Volume= 0.096 af, Depth= 3.83"
Routed to Reach R2 : Site Stormwater System

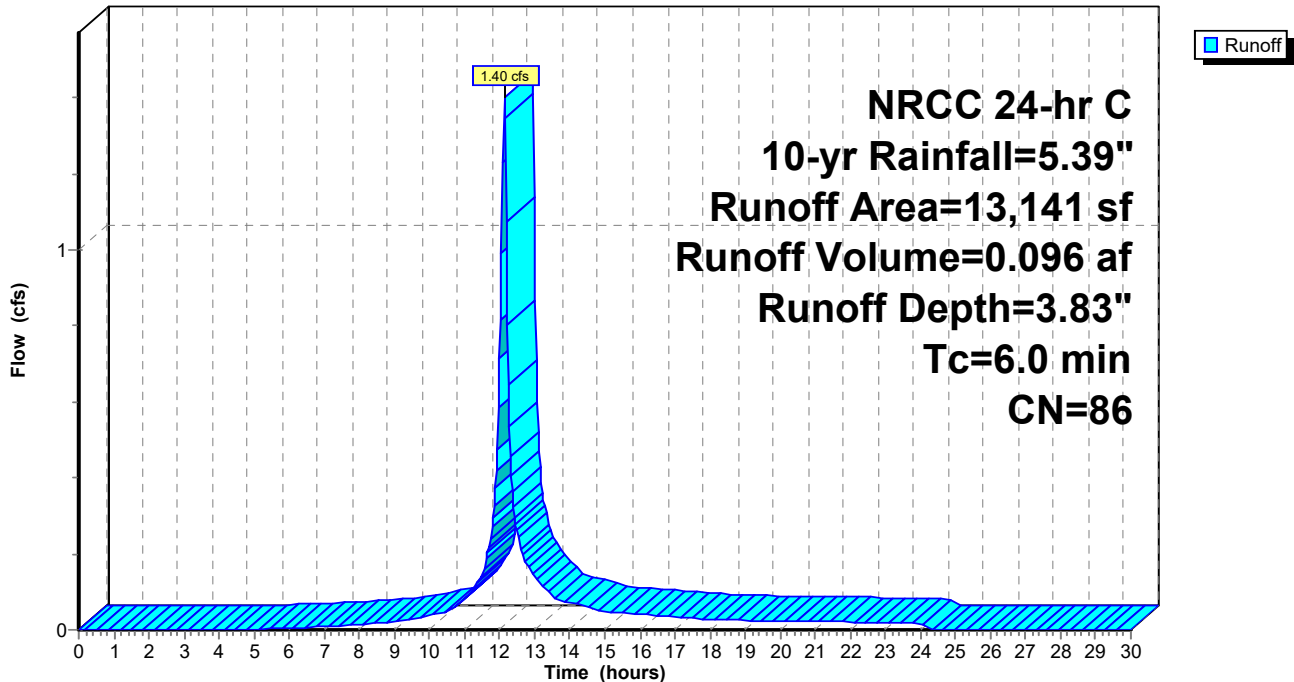
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 10-yr Rainfall=5.39"

Area (sf)	CN	Description
4,730	98	Paved parking, HSG D
817	80	>75% Grass cover, Good, HSG D
* 7,594	79	Landscaping, Good, HSG D
13,141	86	Weighted Average
8,411		64.01% Pervious Area
4,730		35.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-9: CCB 27

Hydrograph



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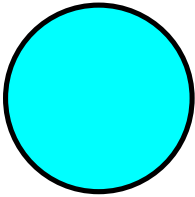
Summary for Reach R1: Roof Leader

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 5.15" for 10-yr event
Inflow = 10.09 cfs @ 12.13 hrs, Volume= 0.789 af
Outflow = 1.33 cfs @ 11.56 hrs, Volume= 0.789 af, Atten= 87%, Lag= 0.0 min
Routed to Pond S-2 : Subsurface Infiltration System

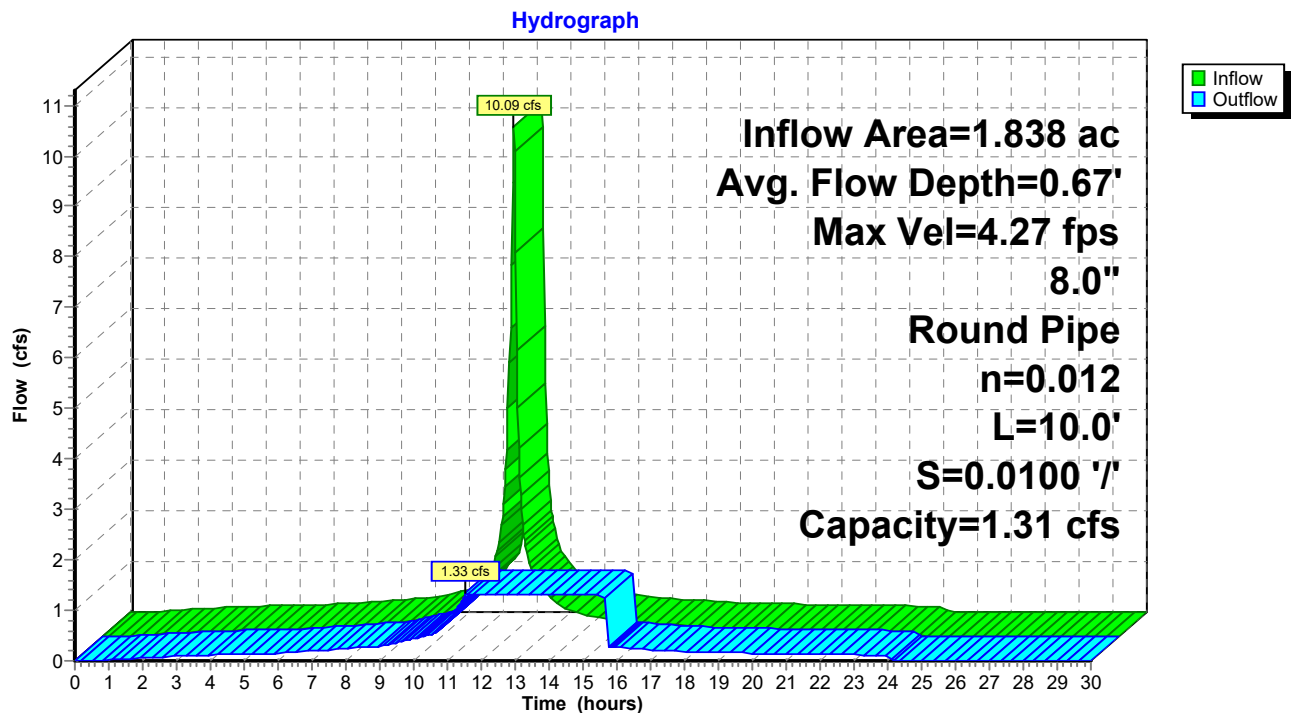
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.27 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.79 fps, Avg. Travel Time= 0.1 min

Peak Storage= 3 cf @ 11.58 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 0.00'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 10.0' Slope= 0.0100 '/'
Inlet Invert= 142.20', Outlet Invert= 142.10'



Reach R1: Roof Leader

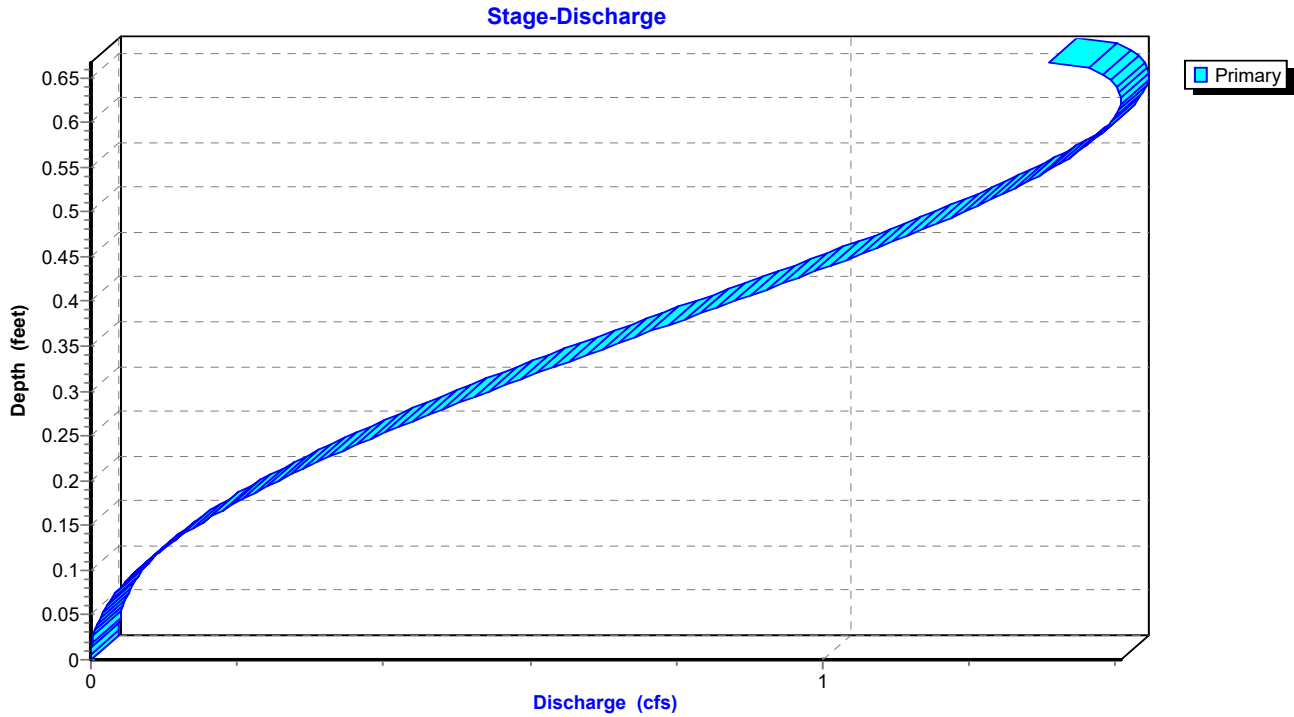


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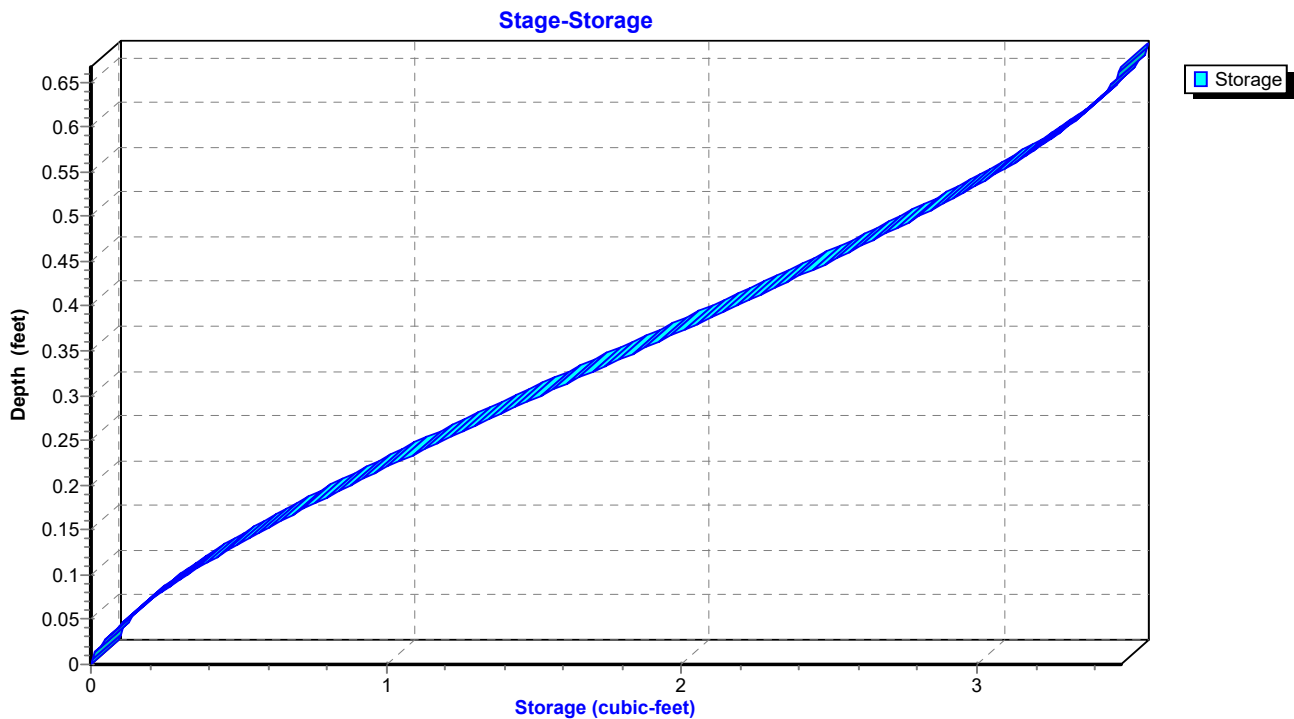
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Reach R1: Roof Leader



Reach R1: Roof Leader



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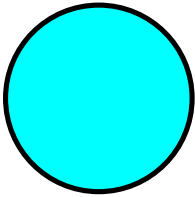
Summary for Reach R2: Site Stormwater System

Inflow Area = 1.221 ac, 71.23% Impervious, Inflow Depth = 4.51" for 10-yr event
Inflow = 6.29 cfs @ 12.13 hrs, Volume= 0.459 af
Outflow = 4.95 cfs @ 12.09 hrs, Volume= 0.459 af, Atten= 21%, Lag= 0.0 min
Routed to Pond S-3 : Subsurface Infiltration System

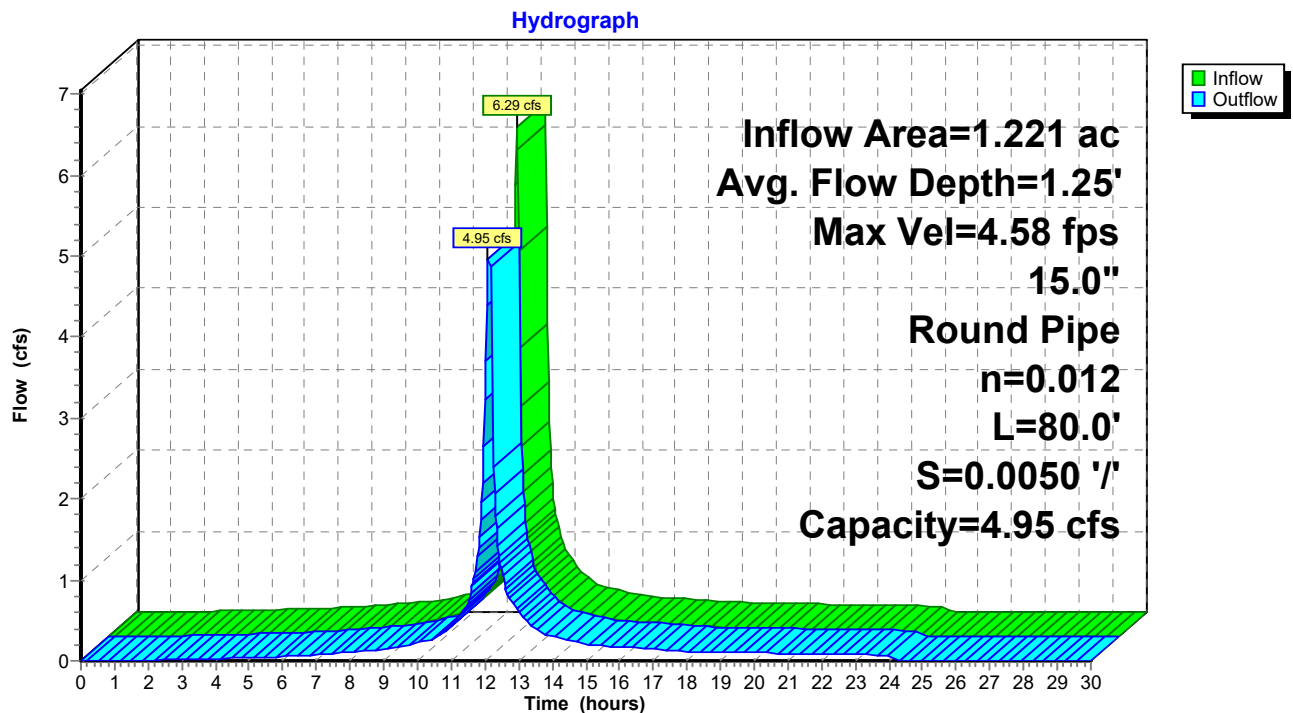
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.58 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.69 fps, Avg. Travel Time= 0.8 min

Peak Storage= 98 cf @ 12.09 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.95 cfs

15.0" Round Pipe
n= 0.012
Length= 80.0' Slope= 0.0050 '/'
Inlet Invert= 138.00', Outlet Invert= 137.60'



Reach R2: Site Stormwater System

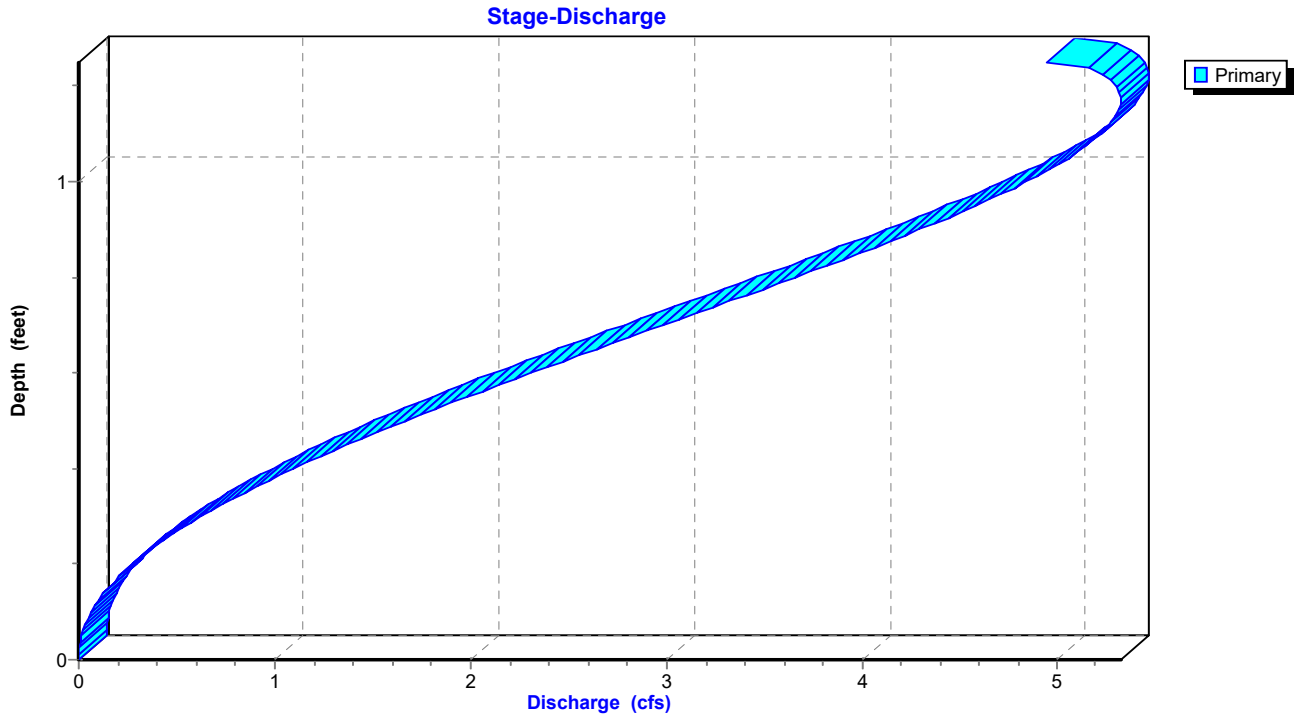


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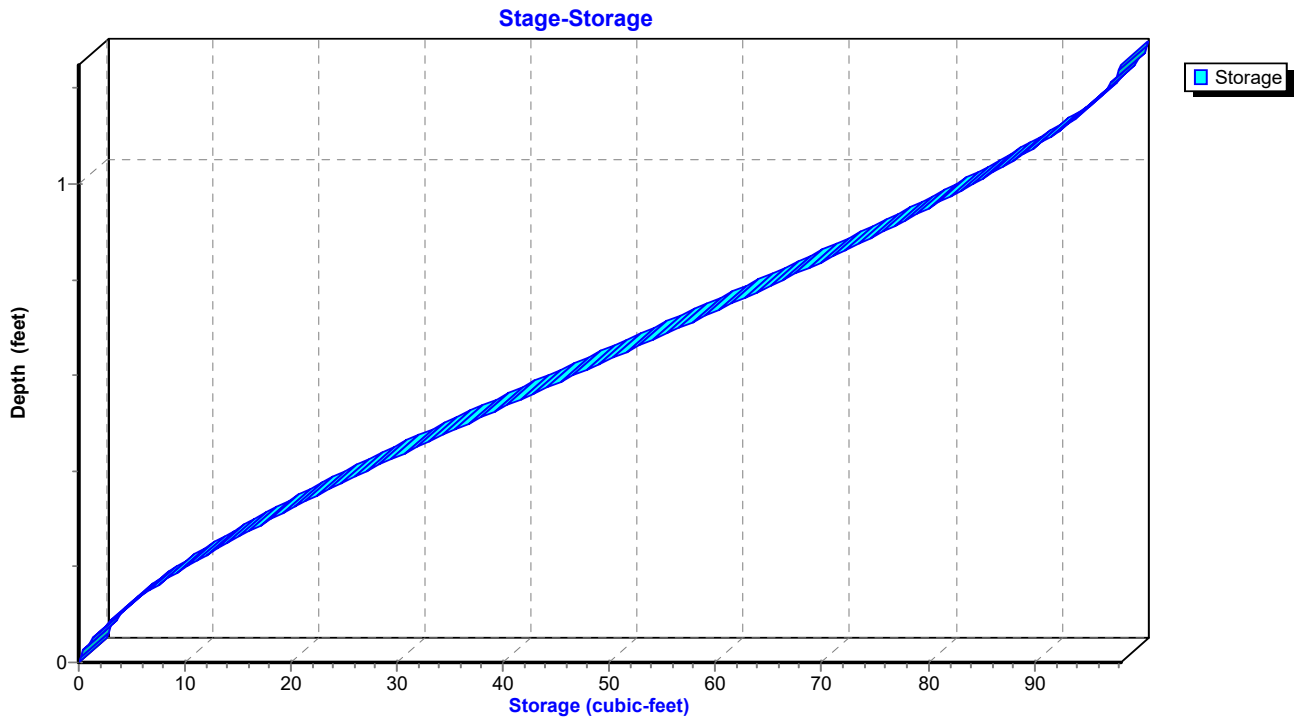
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Reach R2: Site Stormwater System



Reach R2: Site Stormwater System



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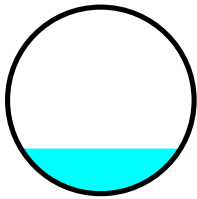
Summary for Reach R3: East Stormwater System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 1.34" for 10-yr event
Inflow = 0.90 cfs @ 12.13 hrs, Volume= 0.072 af
Outflow = 0.90 cfs @ 12.13 hrs, Volume= 0.072 af, Atten= 1%, Lag= 0.4 min
Routed to Pond S-1 : Subsurface Infiltration System

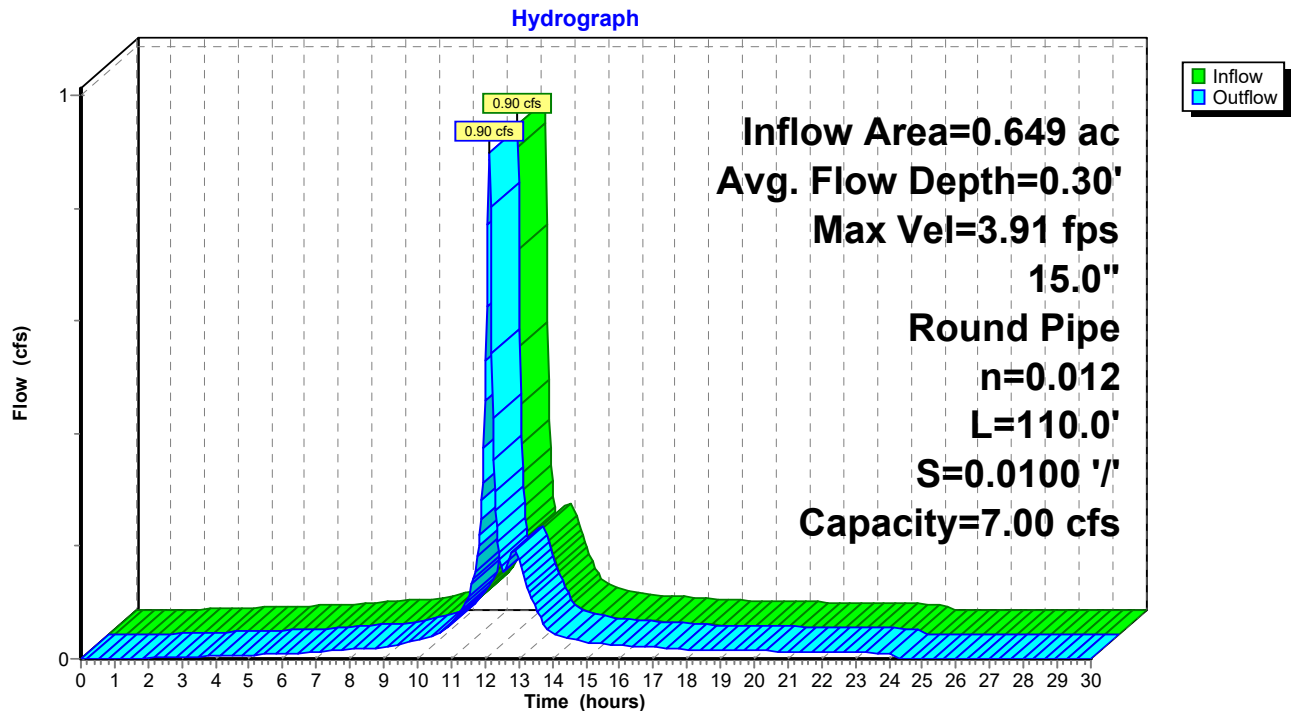
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 3.91 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.26 fps, Avg. Travel Time= 1.5 min

Peak Storage= 25 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.30' , Surface Width= 1.07'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe
n= 0.012
Length= 110.0' Slope= 0.0100 '/'
Inlet Invert= 144.80', Outlet Invert= 143.70'



Reach R3: East Stormwater System

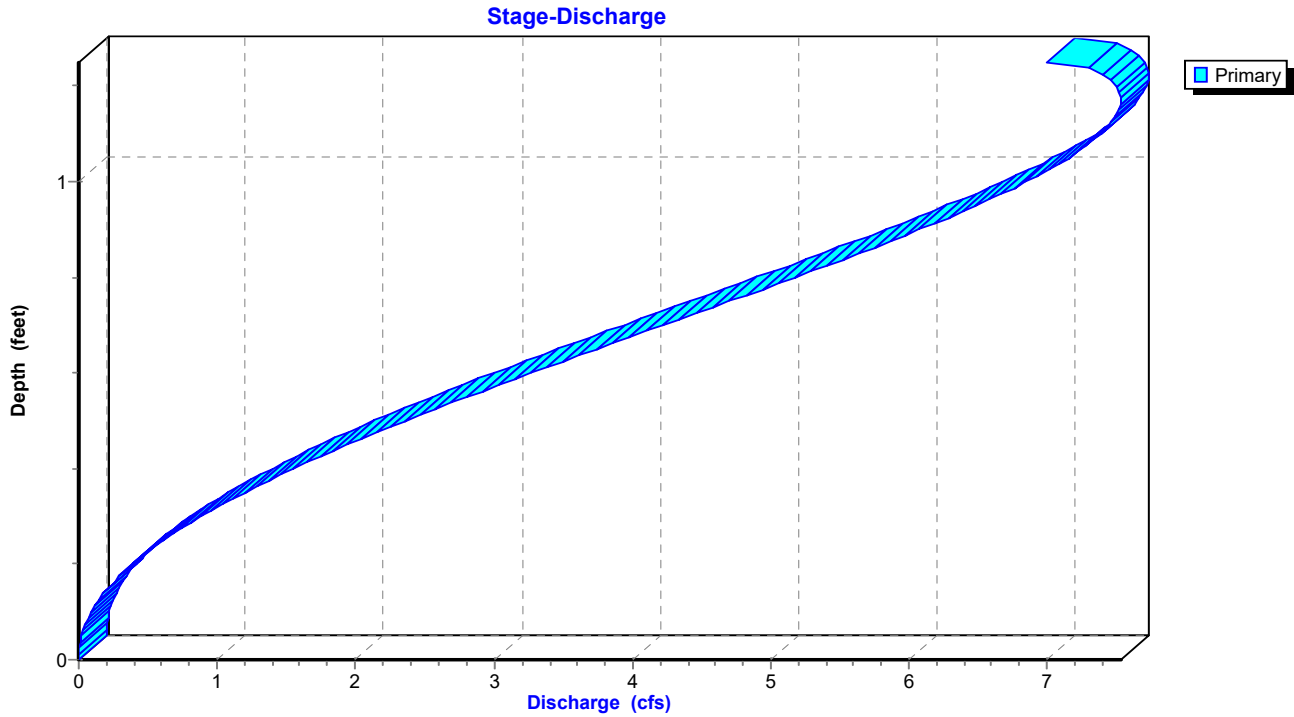


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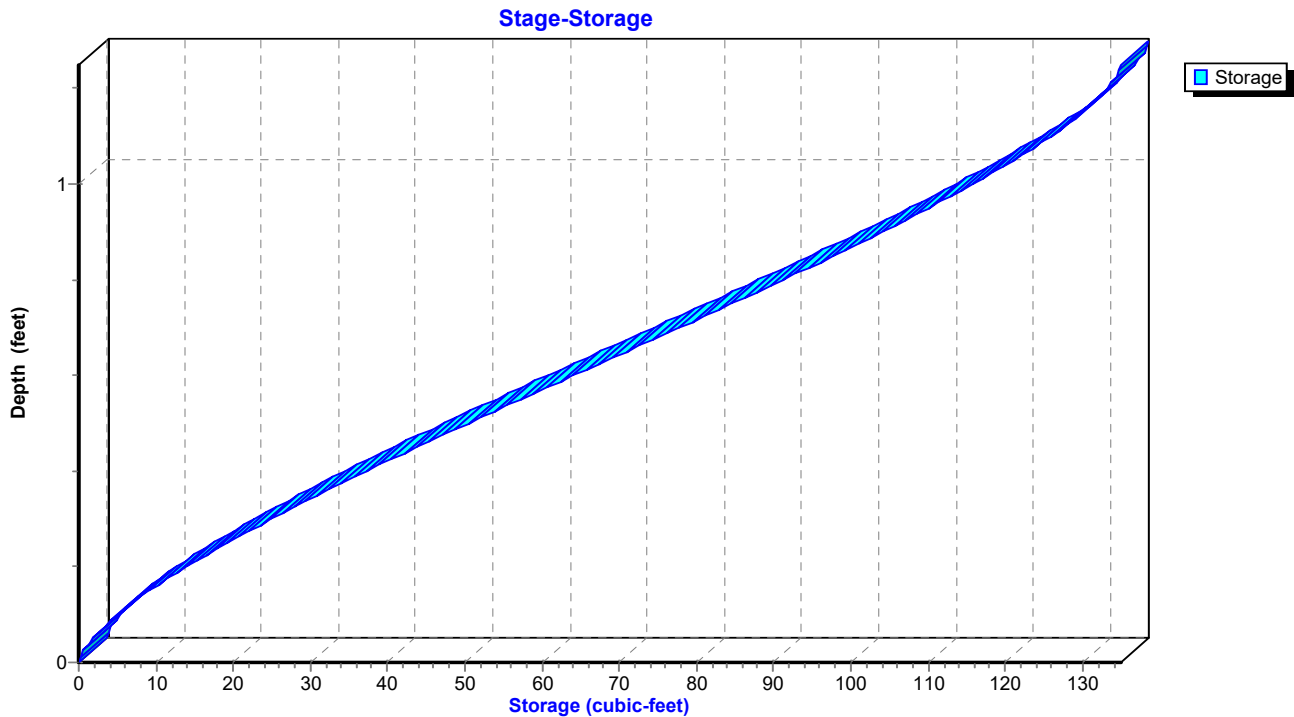
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Reach R3: East Stormwater System



Reach R3: East Stormwater System



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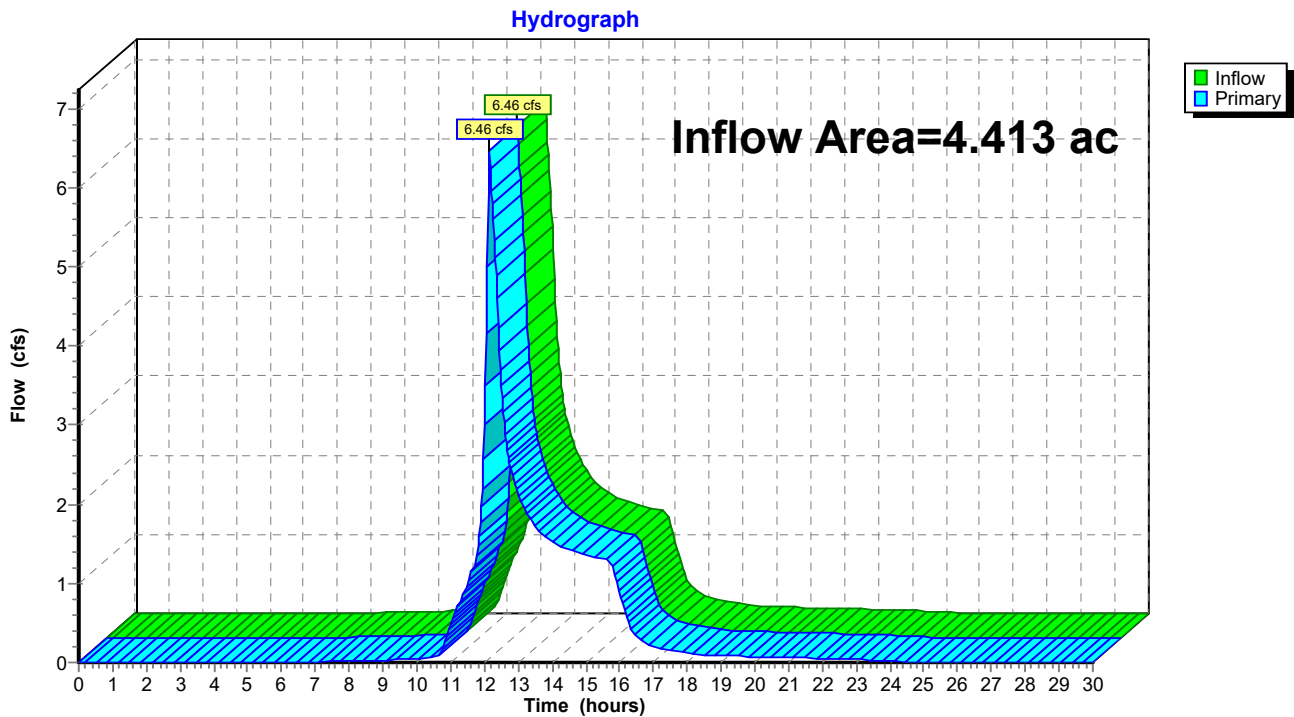
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Summary for Pond AP-1: Norwalk River

Inflow Area = 4.413 ac, 66.52% Impervious, Inflow Depth = 2.36" for 10-yr event
Inflow = 6.46 cfs @ 12.16 hrs, Volume= 0.870 af
Primary = 6.46 cfs @ 12.16 hrs, Volume= 0.870 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River



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Summary for Pond AP-2: Front Lawn Rain Garden

Inflow Area = 0.475 ac, 24.65% Impervious, Inflow Depth = 3.62" for 10-yr event
Inflow = 2.06 cfs @ 12.13 hrs, Volume= 0.143 af
Outflow = 0.23 cfs @ 12.91 hrs, Volume= 0.143 af, Atten= 89%, Lag= 46.6 min
Discarded = 0.14 cfs @ 12.91 hrs, Volume= 0.137 af
Primary = 0.10 cfs @ 12.91 hrs, Volume= 0.006 af
Routed to Reach R3 : East Stormwater System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 149.03' @ 12.91 hrs Surf.Area= 2,919 sf Storage= 2,505 cf

Plug-Flow detention time= 168.2 min calculated for 0.143 af (100% of inflow)
Center-of-Mass det. time= 168.0 min (975.5 - 807.5)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	6,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	1,985	0	0
149.00	2,833	2,409	2,409
150.00	5,420	4,127	6,536

Device	Routing	Invert	Outlet Devices
#1	Primary	141.00'	15.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 141.00' / 140.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	149.00'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	148.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.14 cfs @ 12.91 hrs HW=149.03' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.14 cfs)

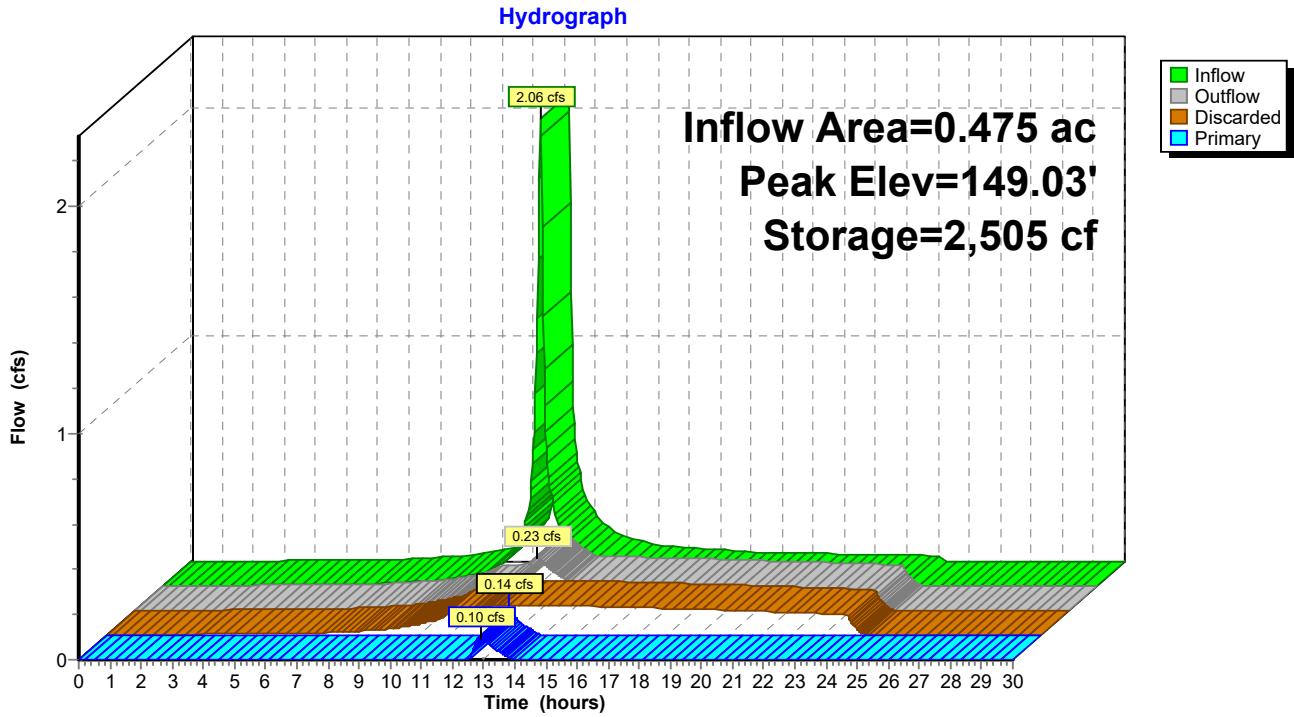
Primary OutFlow Max=0.09 cfs @ 12.91 hrs HW=149.03' (Free Discharge)
↑**1=Culvert** (Passes 0.09 cfs of 16.08 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.09 cfs @ 0.60 fps)

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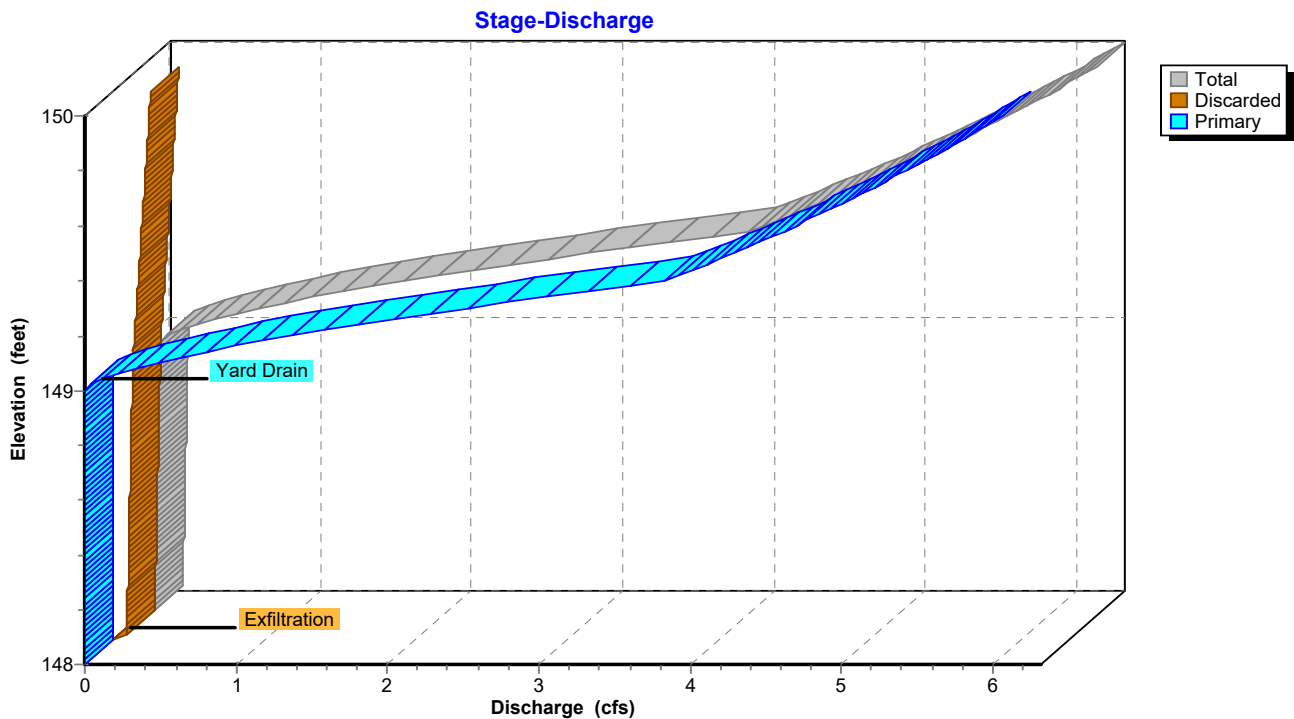
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Pond AP-2: Front Lawn Rain Garden



Pond AP-2: Front Lawn Rain Garden

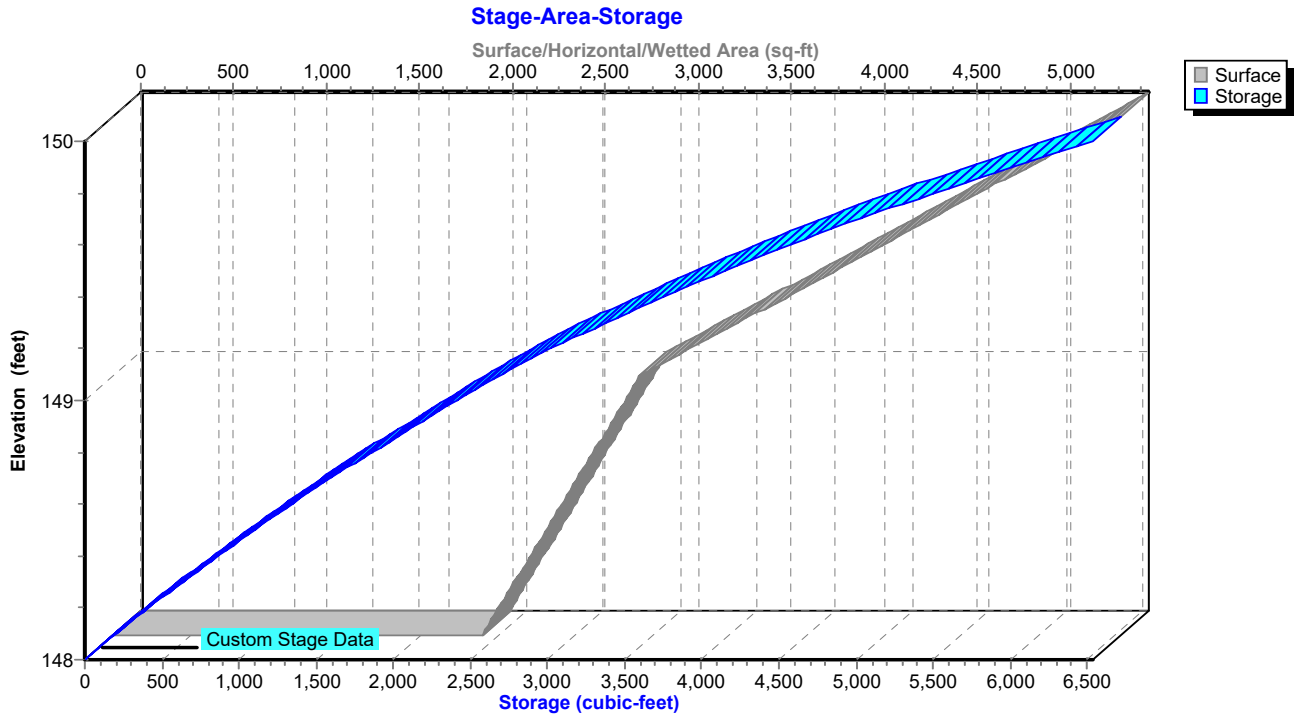


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Pond AP-2: Front Lawn Rain Garden



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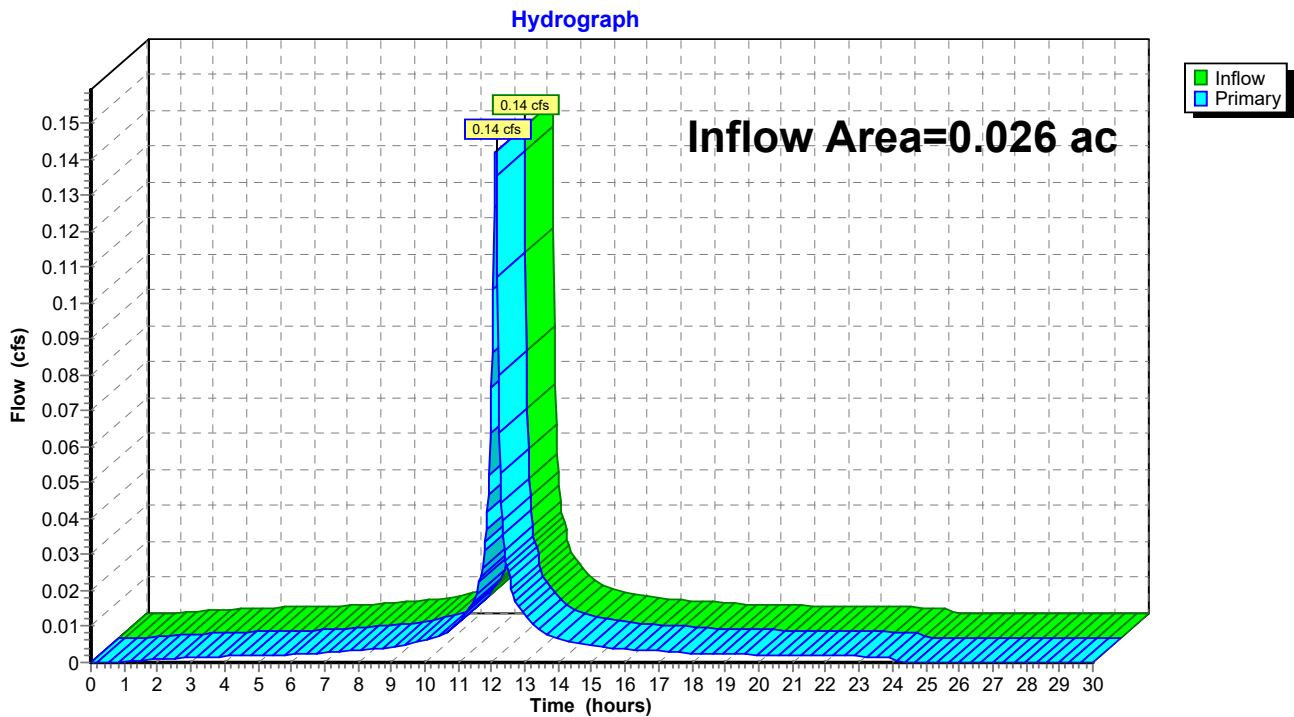
Proposed Conditions
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Summary for Pond AP-3: Danbury Road

Inflow Area = 0.026 ac, 100.00% Impervious, Inflow Depth = 5.15" for 10-yr event
Inflow = 0.14 cfs @ 12.13 hrs, Volume= 0.011 af
Primary = 0.14 cfs @ 12.13 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-3: Danbury Road



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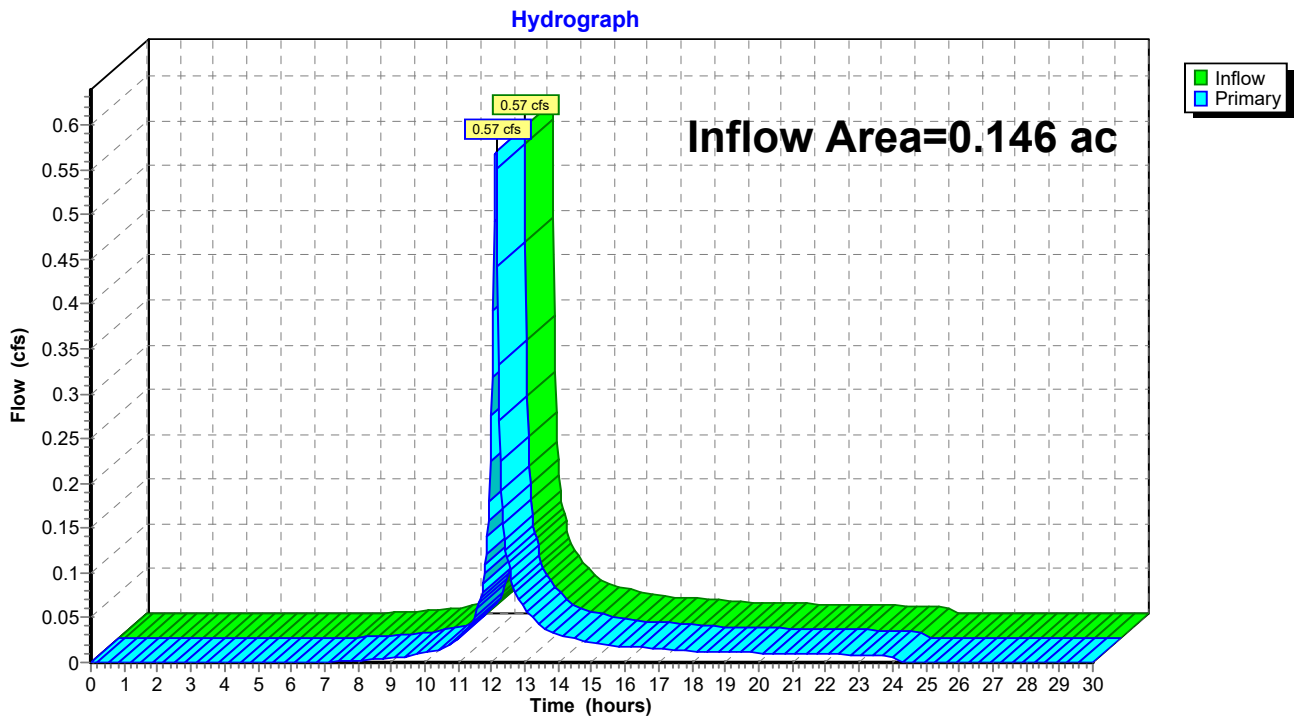
Proposed Conditions
NRCC 24-hr C 10-yr Rainfall=5.39"
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Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.146 ac, 1.46% Impervious, Inflow Depth = 3.14" for 10-yr event
Inflow = 0.57 cfs @ 12.13 hrs, Volume= 0.038 af
Primary = 0.57 cfs @ 12.13 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Summary for Pond B-1: South Basin

Inflow Area = 0.116 ac, 17.66% Impervious, Inflow Depth = 3.53" for 10-yr event
Inflow = 0.50 cfs @ 12.13 hrs, Volume= 0.034 af
Outflow = 0.44 cfs @ 12.17 hrs, Volume= 0.034 af, Atten= 13%, Lag= 2.4 min
Discarded = 0.02 cfs @ 12.17 hrs, Volume= 0.024 af
Primary = 0.41 cfs @ 12.17 hrs, Volume= 0.010 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.99' @ 12.17 hrs Surf.Area= 536 sf Storage= 378 cf

Plug-Flow detention time= 113.5 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 113.5 min (931.7 - 818.3)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,118 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	228	0	0
140.00	539	384	384
141.00	929	734	1,118

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	139.90'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 12.17 hrs HW=139.99' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.02 cfs)

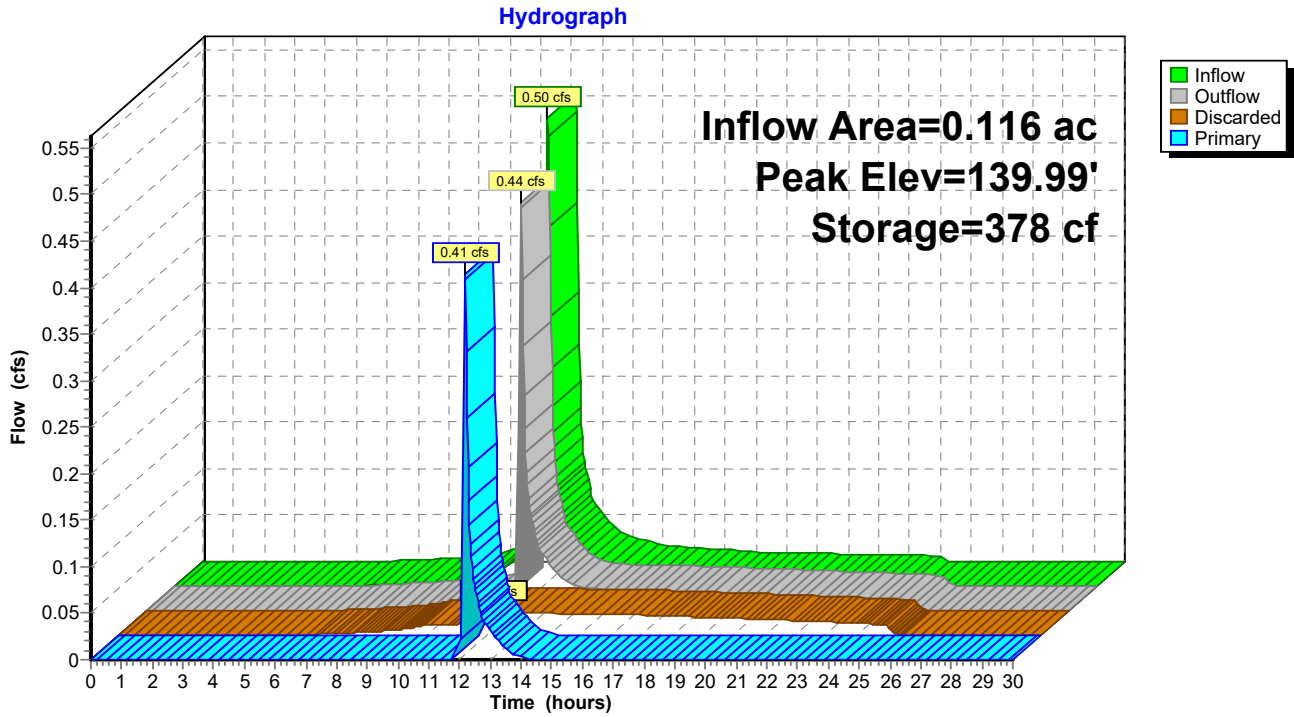
Primary OutFlow Max=0.40 cfs @ 12.17 hrs HW=139.99' (Free Discharge)
↑**1=Culvert** (Passes 0.40 cfs of 2.01 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.40 cfs @ 0.97 fps)

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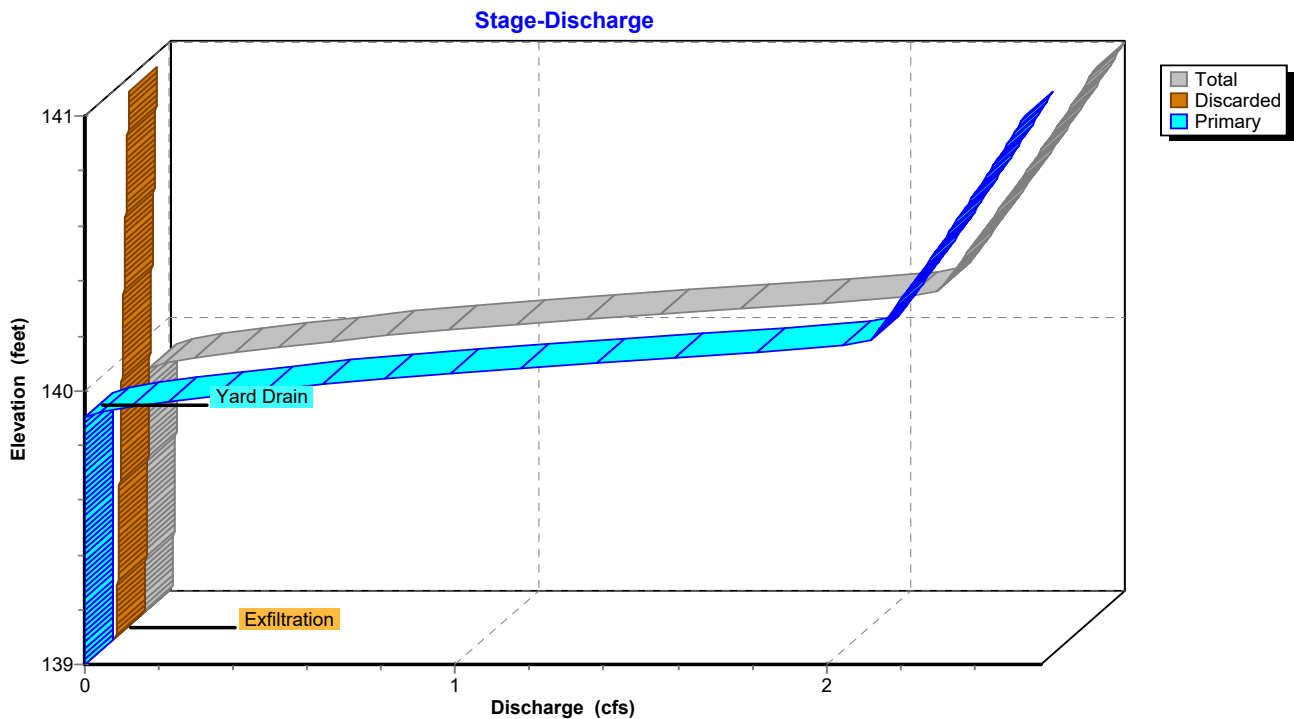
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Pond B-1: South Basin



Pond B-1: South Basin



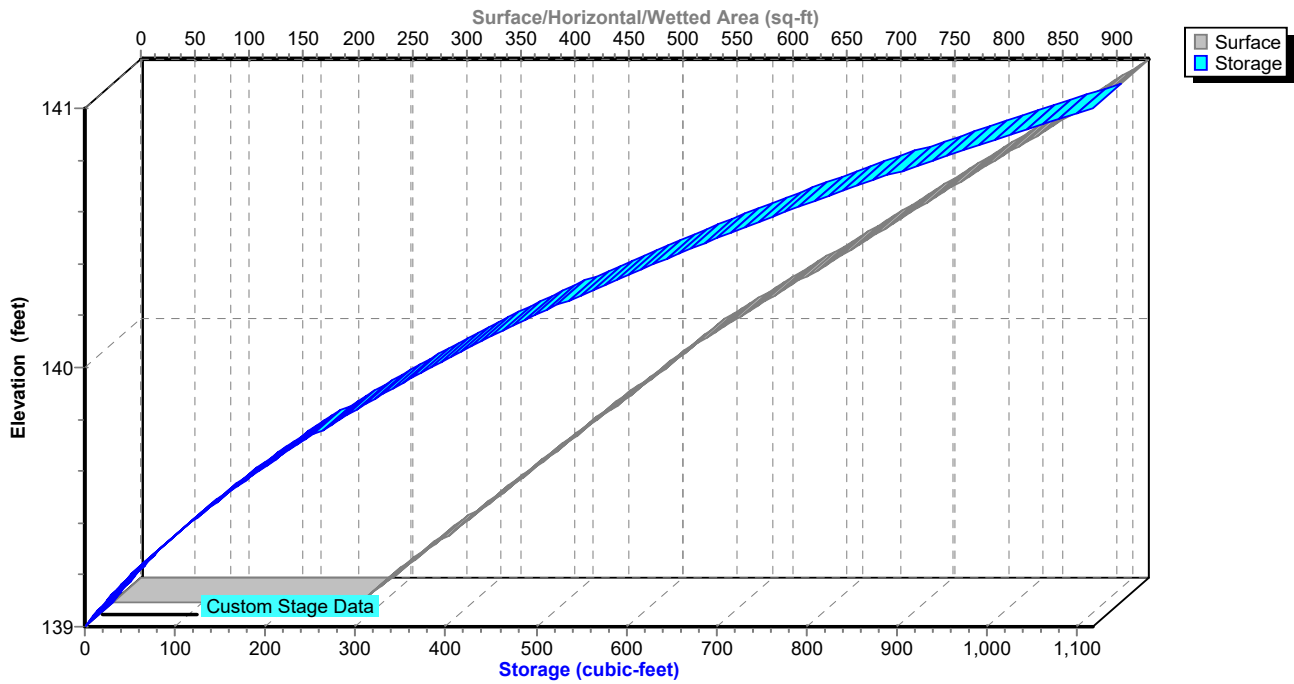
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Pond B-1: South Basin

Stage-Area-Storage



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Summary for Pond B-2: North Basin

Inflow Area = 0.154 ac, 7.18% Impervious, Inflow Depth = 3.63" for 10-yr event
Inflow = 0.68 cfs @ 12.13 hrs, Volume= 0.047 af
Outflow = 0.28 cfs @ 12.27 hrs, Volume= 0.047 af, Atten= 60%, Lag= 8.4 min
Discarded = 0.04 cfs @ 12.27 hrs, Volume= 0.039 af
Primary = 0.24 cfs @ 12.27 hrs, Volume= 0.008 af
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.86' @ 12.27 hrs Surf.Area= 883 sf Storage= 634 cf

Plug-Flow detention time= 117.6 min calculated for 0.046 af (100% of inflow)
Center-of-Mass det. time= 117.5 min (932.6 - 815.1)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	589	0	0
140.00	930	760	760
141.00	1,327	1,129	1,888

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	10.0" Round Culvert L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	139.80'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.27 hrs HW=139.86' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.23 cfs @ 12.27 hrs HW=139.86' (Free Discharge)
↑**1=Culvert** (Passes 0.23 cfs of 2.16 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.23 cfs @ 0.81 fps)

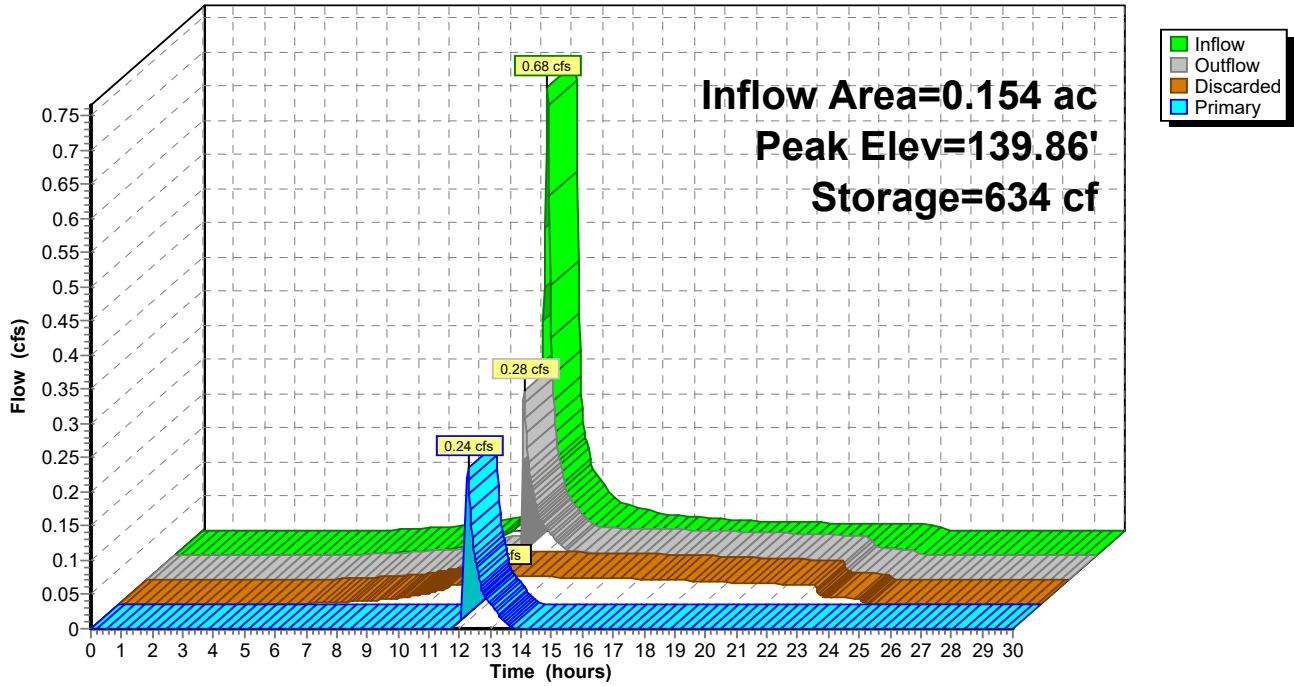
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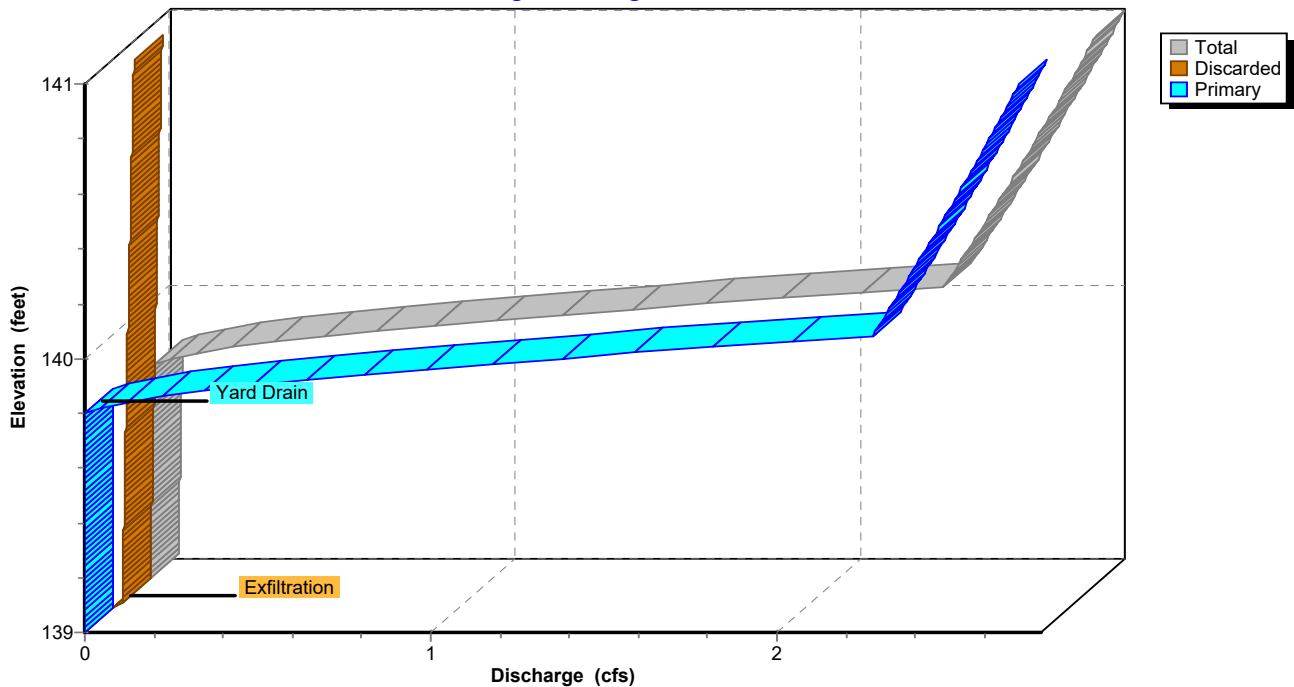
Pond B-2: North Basin

Hydrograph



Pond B-2: North Basin

Stage-Discharge



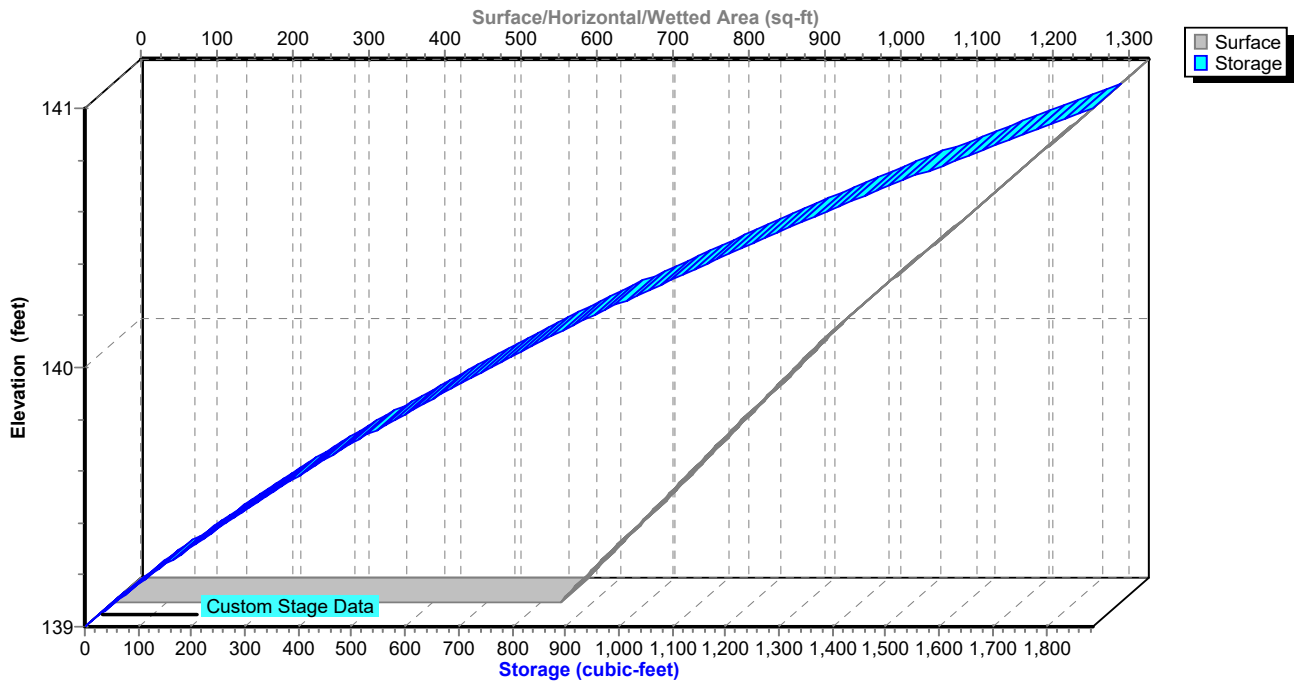
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Pond B-2: North Basin

Stage-Area-Storage



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Summary for Pond S-1: Subsurface Infiltration System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 1.34" for 10-yr event
Inflow = 0.90 cfs @ 12.13 hrs, Volume= 0.072 af
Outflow = 0.10 cfs @ 13.46 hrs, Volume= 0.072 af, Atten= 89%, Lag= 79.9 min
Discarded = 0.06 cfs @ 11.01 hrs, Volume= 0.070 af
Primary = 0.04 cfs @ 13.46 hrs, Volume= 0.002 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 144.72' @ 13.46 hrs Surf.Area= 0.029 ac Storage= 0.031 af

Plug-Flow detention time= 172.0 min calculated for 0.072 af (100% of inflow)
Center-of-Mass det. time= 171.8 min (947.7 - 775.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.10'	0.026 af	20.50'W x 60.58'L x 3.50'H Field A 0.100 af Overall - 0.034 af Embedded = 0.066 af x 40.0% Voids
#2A	143.60'	0.034 af	ADS_StormTech SC-740 +Cap x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	144.35'	15.0" Round Culvert L= 119.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.35' / 142.85' S= 0.0126 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	144.63'	4.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	146.00'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	143.10'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 11.01 hrs HW=143.14' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.04 cfs @ 13.46 hrs HW=144.72' (Free Discharge)
↑**1=Culvert** (Passes 0.04 cfs of 0.63 cfs potential flow)
↑**2=Orifice** (Orifice Controls 0.04 cfs @ 1.02 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-1: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af

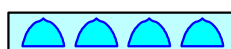
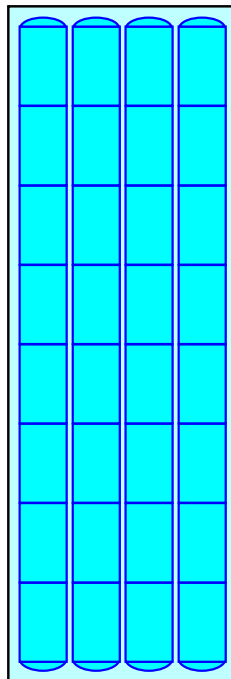
Overall Storage Efficiency = 60.3%

Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers

161.0 cy Field

106.5 cy Stone

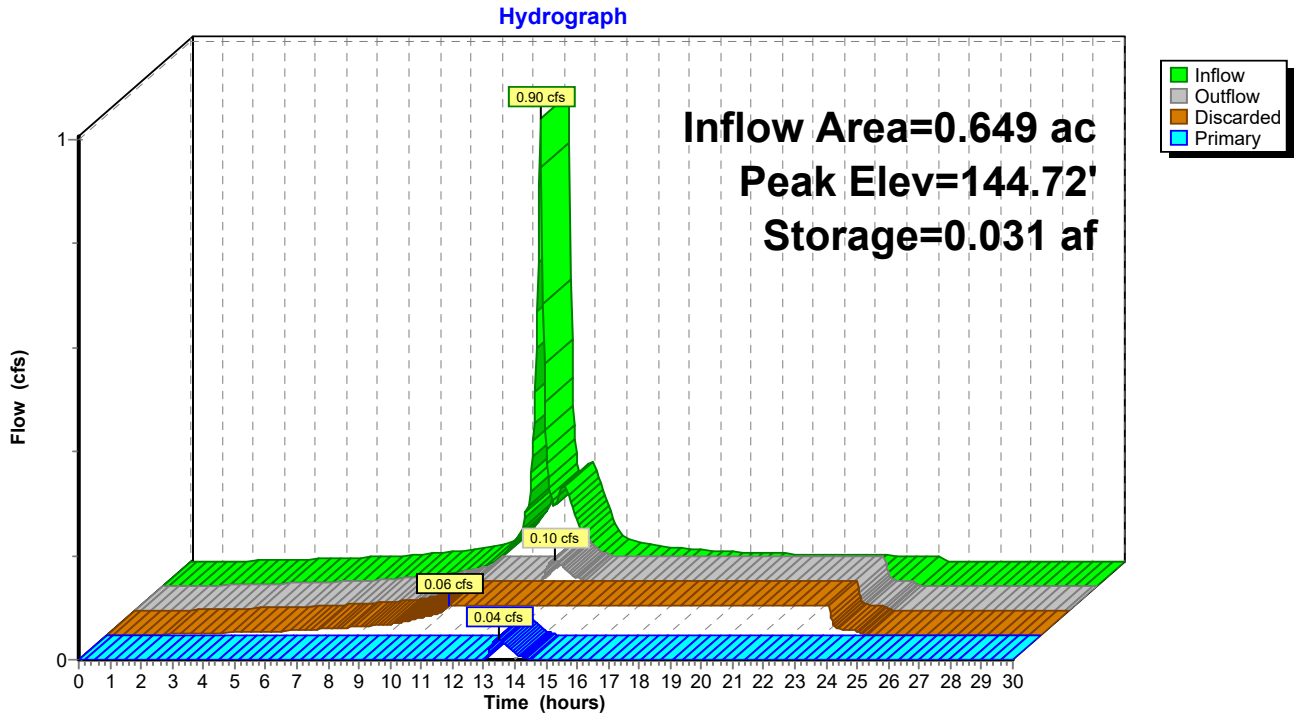


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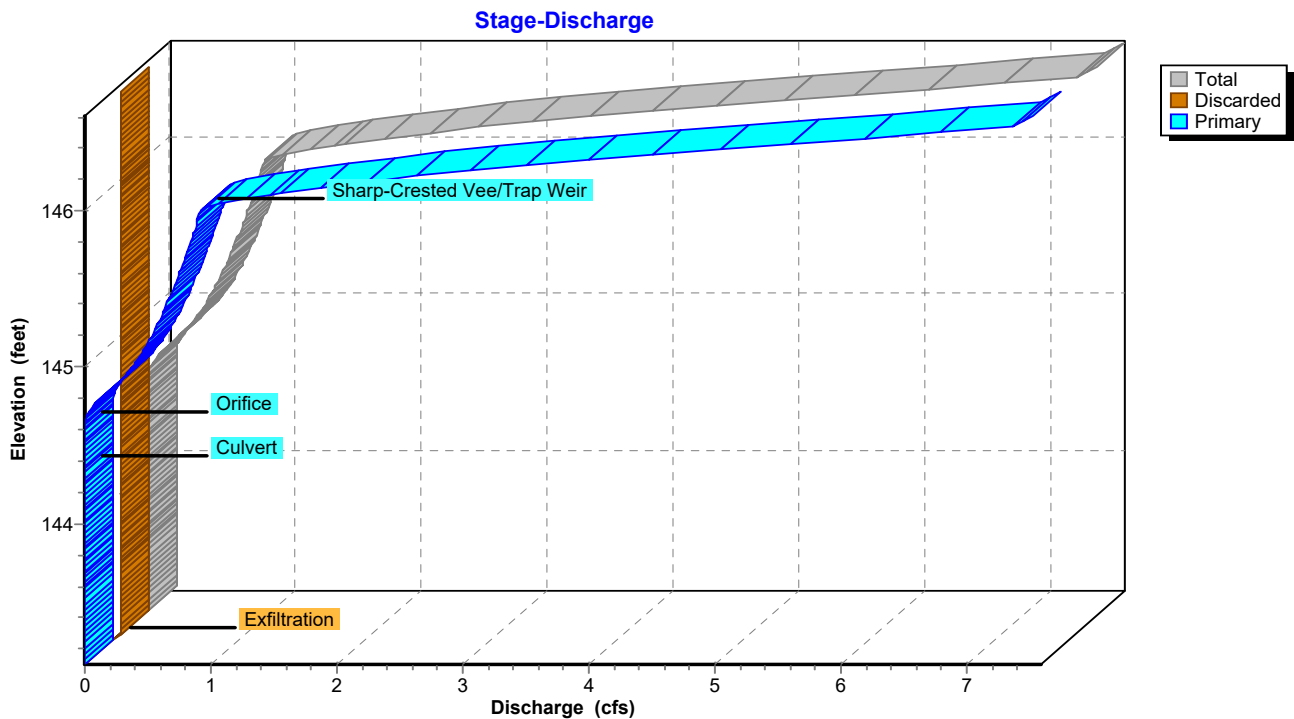
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Pond S-1: Subsurface Infiltration System



Pond S-1: Subsurface Infiltration System

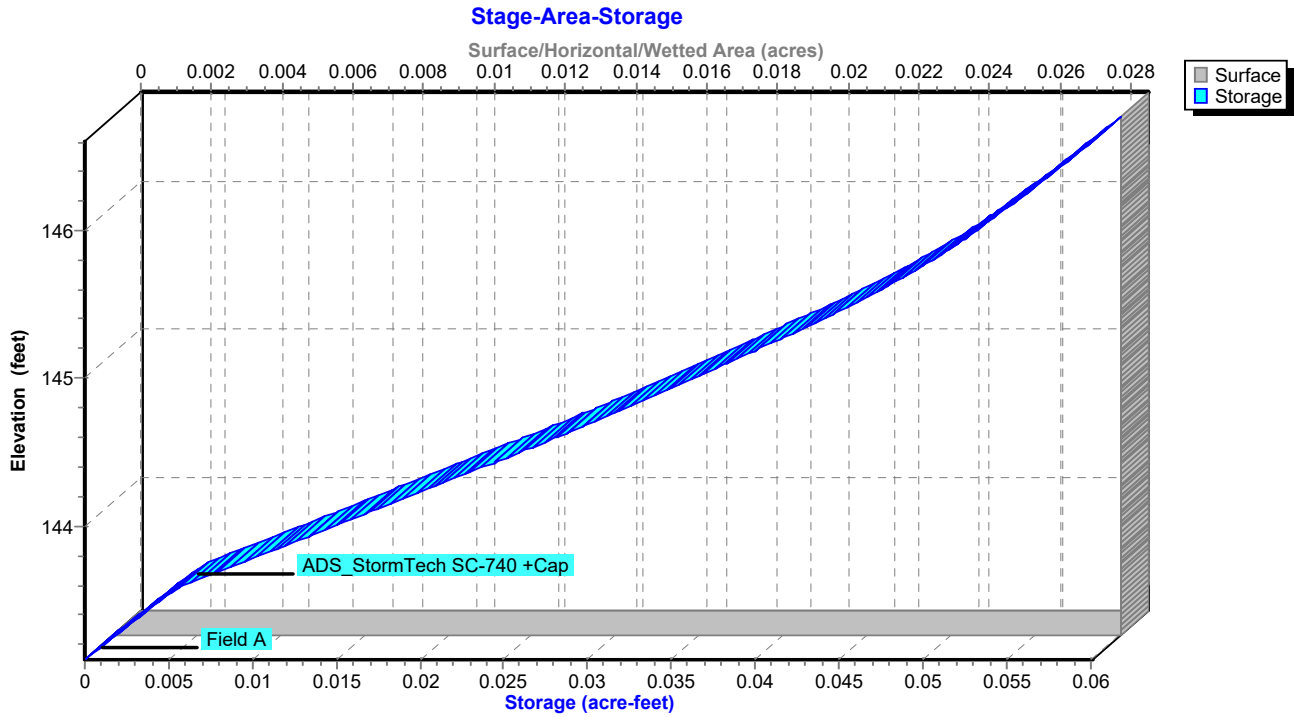


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Pond S-1: Subsurface Infiltration System



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Summary for Pond S-2: Subsurface Infiltration System

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 5.15" for 10-yr event
Inflow = 1.33 cfs @ 11.56 hrs, Volume= 0.789 af
Outflow = 1.31 cfs @ 15.72 hrs, Volume= 0.781 af, Atten= 2%, Lag= 249.7 min
Discarded = 0.12 cfs @ 4.14 hrs, Volume= 0.278 af
Primary = 1.19 cfs @ 15.72 hrs, Volume= 0.503 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 144.17' @ 15.72 hrs Surf.Area= 0.060 ac Storage= 0.107 af

Plug-Flow detention time= 108.0 min calculated for 0.781 af (99% of inflow)
Center-of-Mass det. time= 101.4 min (885.2 - 783.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	141.50'	0.054 af	25.25"W x 103.30"L x 3.50"H Field A 0.210 af Overall - 0.074 af Embedded = 0.136 af x 40.0% Voids
#2A	142.00'	0.074 af	ADS_StormTech SC-740 +Cap x 70 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 70 Chambers in 5 Rows
		0.128 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.04'	12.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.04' / 142.29' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	143.14'	5.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	144.40'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	141.50'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 4.14 hrs HW=141.54' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=1.19 cfs @ 15.72 hrs HW=144.17' (Free Discharge)
↑**1=Culvert** (Passes 1.19 cfs of 2.99 cfs potential flow)
↑**2=Orifice** (Orifice Controls 1.19 cfs @ 4.36 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-2: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

14 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 101.30' Row Length +12.0" End Stone x 2 = 103.30' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

70 Chambers x 45.9 cf = 3,215.8 cf Chamber Storage

9,128.8 cf Field - 3,215.8 cf Chambers = 5,913.0 cf Stone x 40.0% Voids = 2,365.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,581.0 cf = 0.128 af

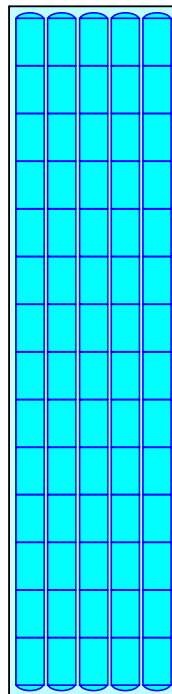
Overall Storage Efficiency = 61.1%

Overall System Size = 103.30' x 25.25' x 3.50'

70 Chambers

338.1 cy Field

219.0 cy Stone

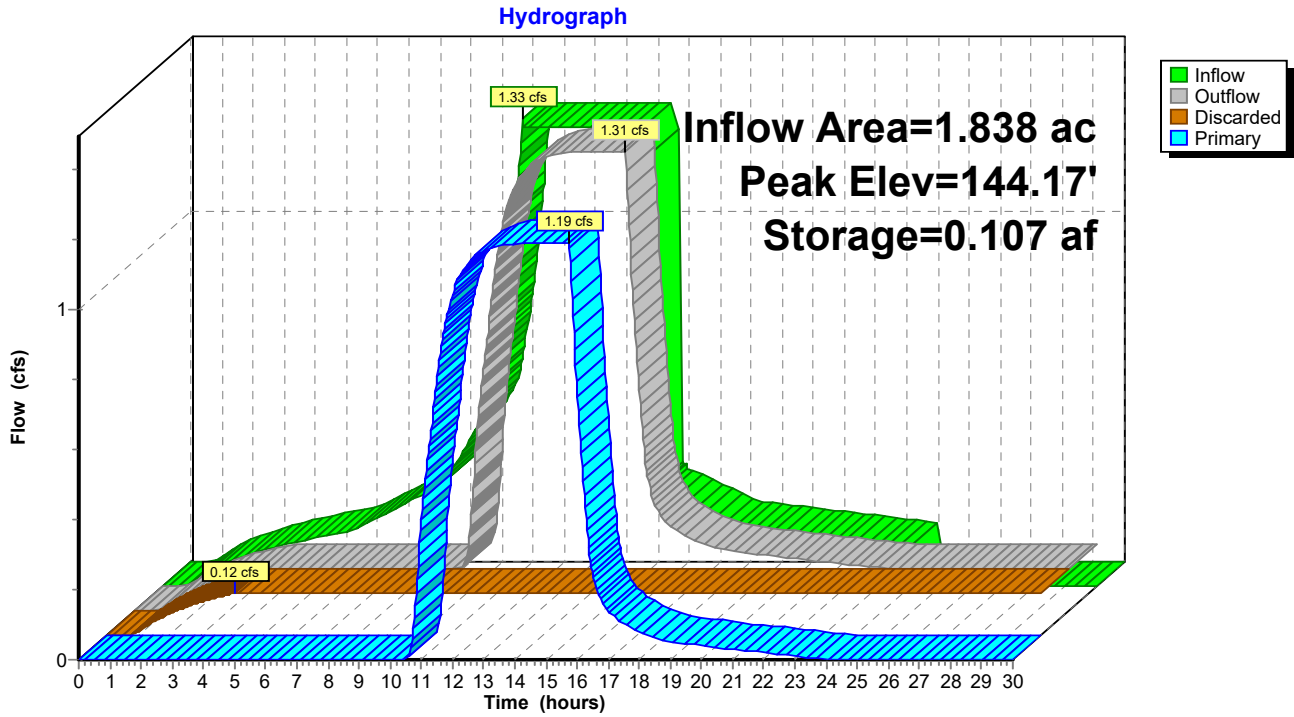


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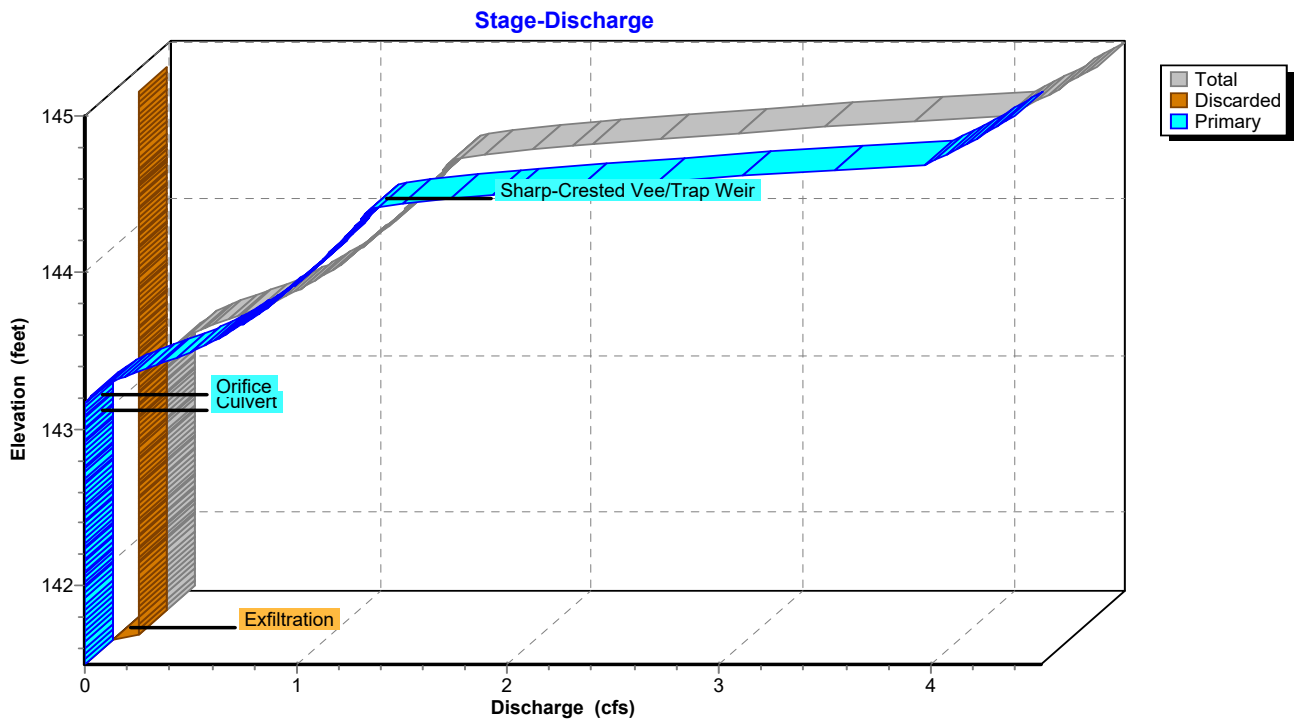
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Pond S-2: Subsurface Infiltration System



Pond S-2: Subsurface Infiltration System

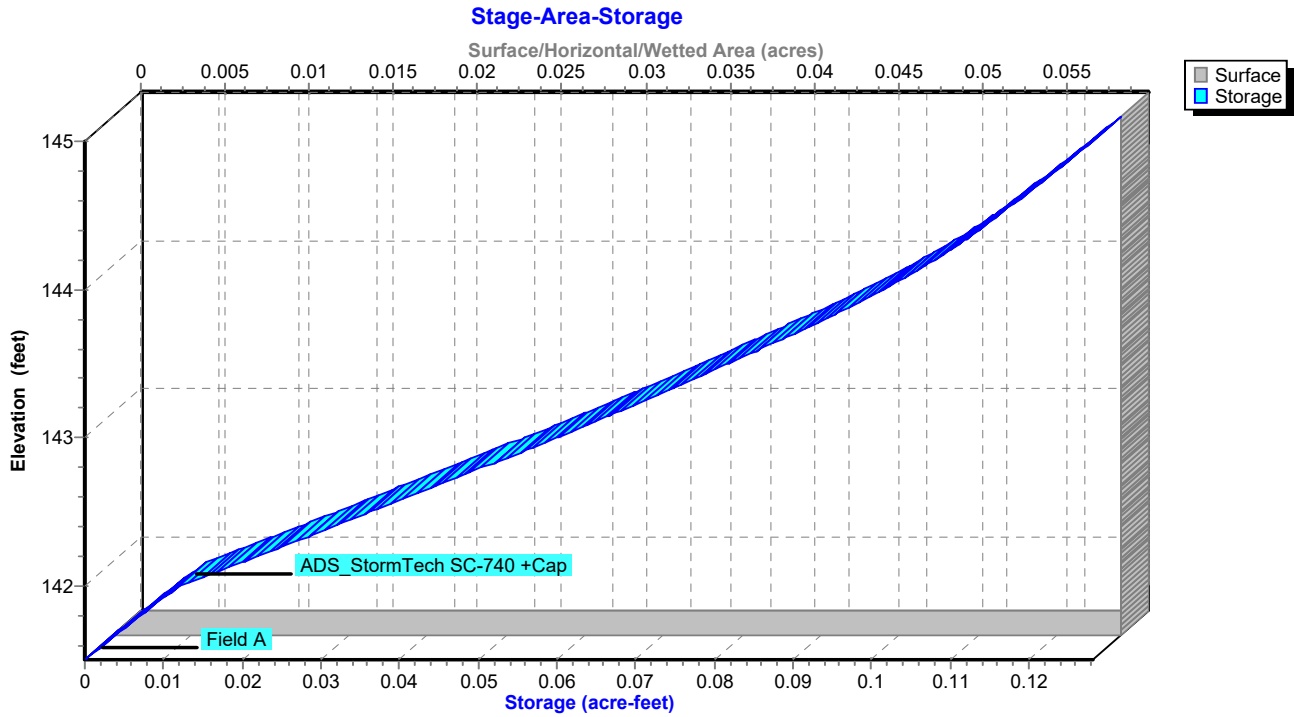


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Pond S-2: Subsurface Infiltration System



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Summary for Pond S-3: Subsurface Infiltration System

Inflow Area = 1.375 ac, 64.06% Impervious, Inflow Depth = 4.08" for 10-yr event
Inflow = 5.08 cfs @ 12.21 hrs, Volume= 0.467 af
Outflow = 3.71 cfs @ 12.26 hrs, Volume= 0.467 af, Atten= 27%, Lag= 3.0 min
Discarded = 0.16 cfs @ 9.39 hrs, Volume= 0.244 af
Primary = 3.55 cfs @ 12.26 hrs, Volume= 0.223 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.06' @ 12.26 hrs Surf.Area= 0.081 ac Storage= 0.114 af

Plug-Flow detention time= 73.5 min calculated for 0.467 af (100% of inflow)
Center-of-Mass det. time= 73.5 min (852.9 - 779.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	137.00'	0.073 af	25.25"W x 138.90'L x 3.50'H Field A 0.282 af Overall - 0.100 af Embedded = 0.182 af x 40.0% Voids
#2A	137.50'	0.100 af	ADS_StormTech SC-740 +Cap x 95 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 95 Chambers in 5 Rows
		0.173 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	137.90'	18.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 137.90' / 137.53' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	137.92'	7.0" Vert. Orifice X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	139.90'	5.0' long Weir Wall Cv= 2.62 (C= 3.28)
#4	Discarded	137.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 9.39 hrs HW=137.04' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=3.54 cfs @ 12.26 hrs HW=139.05' (Free Discharge)
↑**1=Culvert** (Passes 3.54 cfs of 4.30 cfs potential flow)
↑**2=Orifice** (Orifice Controls 3.54 cfs @ 4.41 fps)
↑**3=Weir Wall** (Controls 0.00 cfs)

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Pond S-3: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

19 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 136.90' Row Length +12.0" End Stone x 2 = 138.90' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

95 Chambers x 45.9 cf = 4,364.3 cf Chamber Storage

12,275.0 cf Field - 4,364.3 cf Chambers = 7,910.7 cf Stone x 40.0% Voids = 3,164.3 cf Stone Storage

Chamber Storage + Stone Storage = 7,528.6 cf = 0.173 af

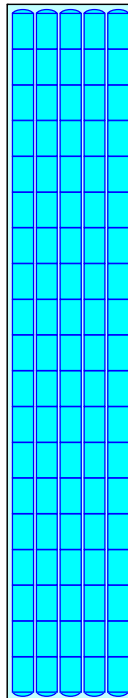
Overall Storage Efficiency = 61.3%

Overall System Size = 138.90' x 25.25' x 3.50'

95 Chambers

454.6 cy Field

293.0 cy Stone

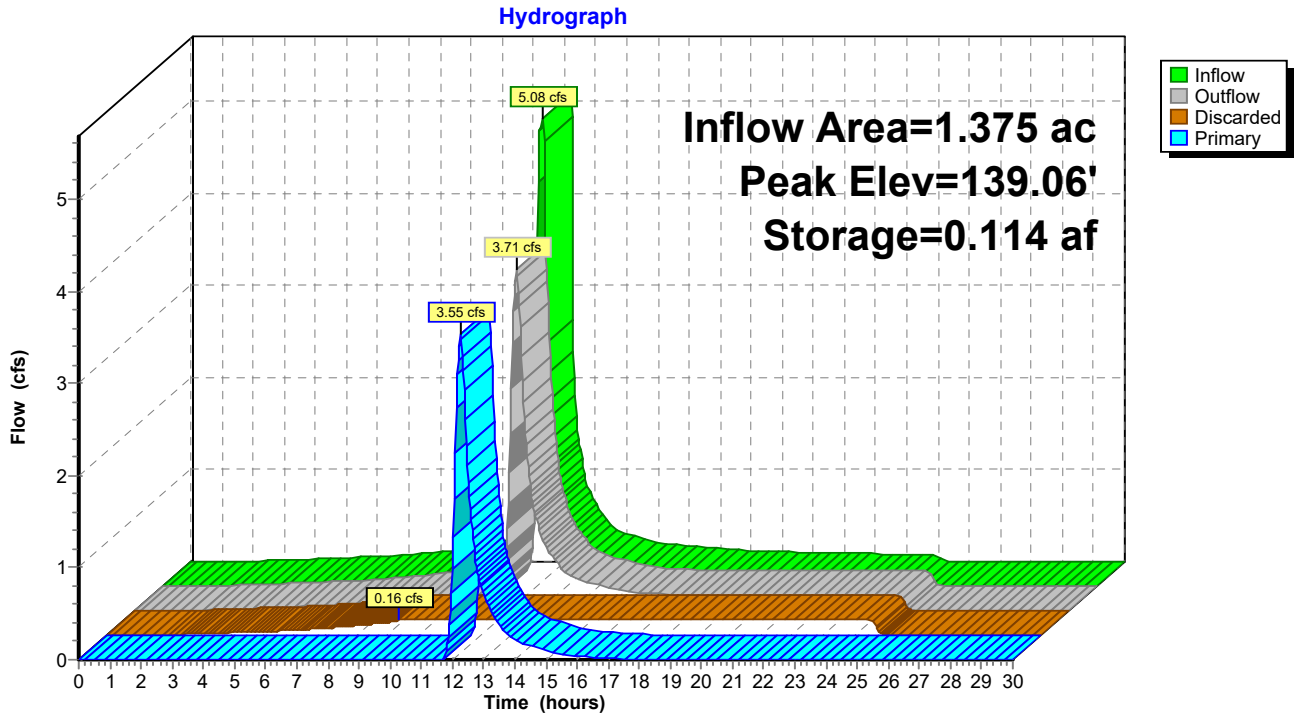


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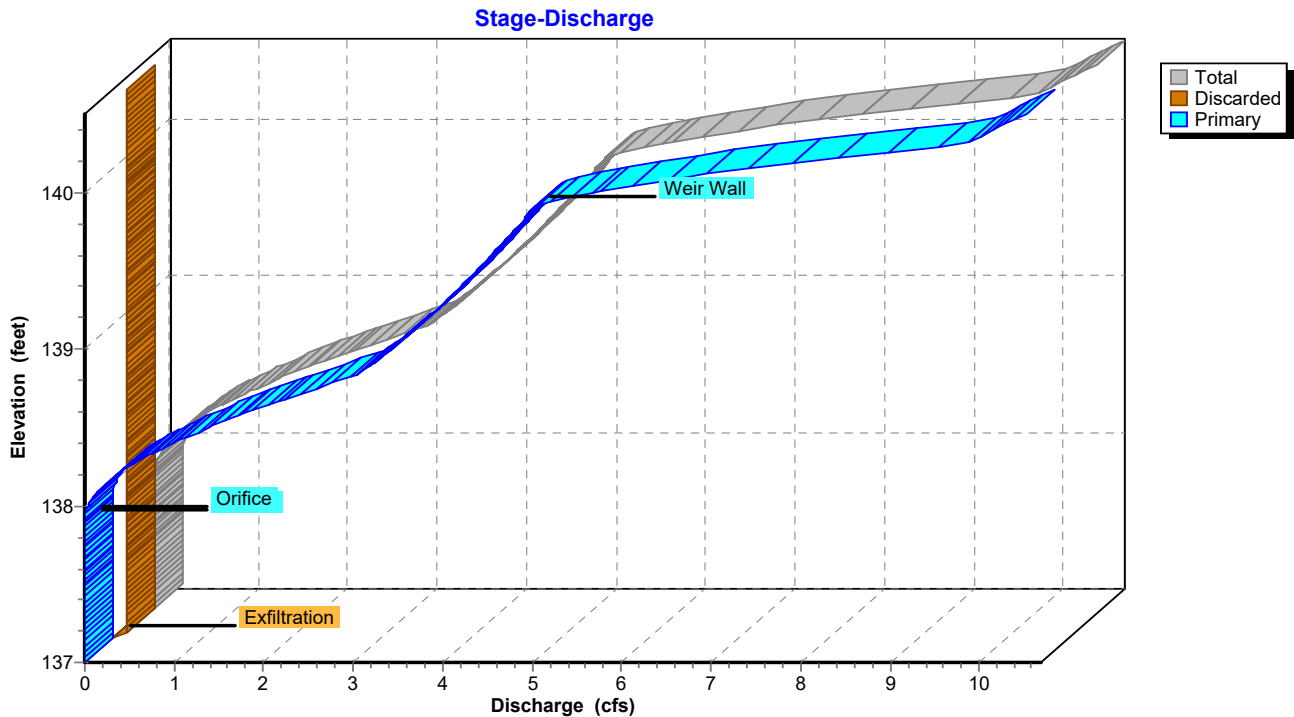
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Pond S-3: Subsurface Infiltration System



Pond S-3: Subsurface Infiltration System

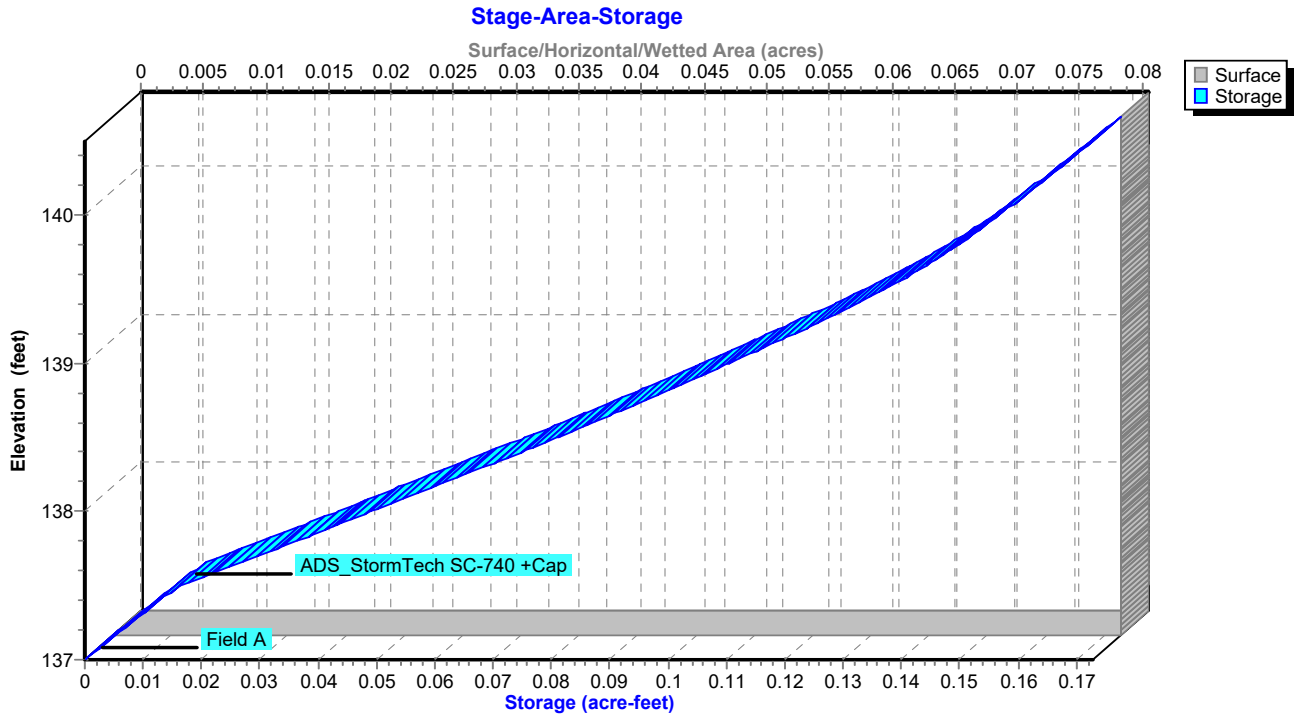


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Pond S-3: Subsurface Infiltration System



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Summary for Subcatchment PR-1: CCB 14

Runoff = 0.32 cfs @ 12.13 hrs, Volume= 0.025 af, Depth= 6.20"
Routed to Reach R2 : Site Stormwater System

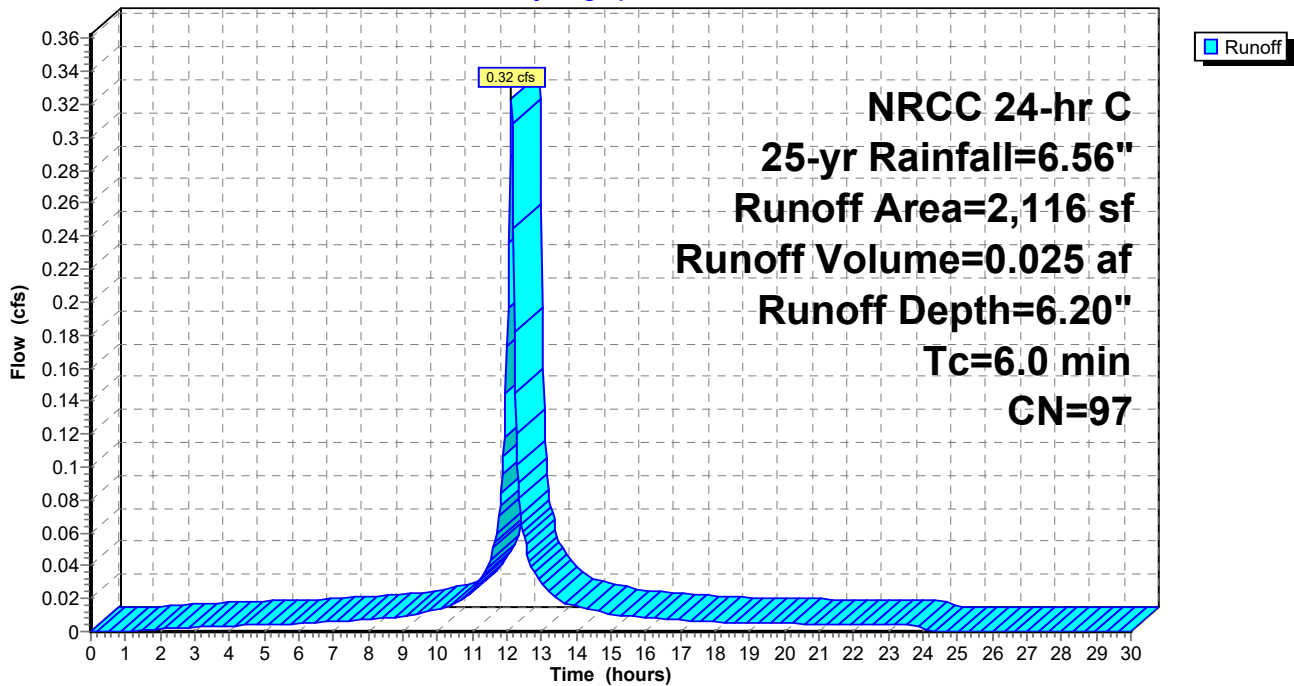
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
2,045	98	Paved parking, HSG D
* 71	79	Landscaping, Good, HSG D
2,116	97	Weighted Average
71		3.36% Pervious Area
2,045		96.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-1: CCB 14

Hydrograph



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Summary for Subcatchment PR-10: CCB 28

Runoff = 1.37 cfs @ 12.13 hrs, Volume= 0.104 af, Depth= 5.97"
Routed to Reach R2 : Site Stormwater System

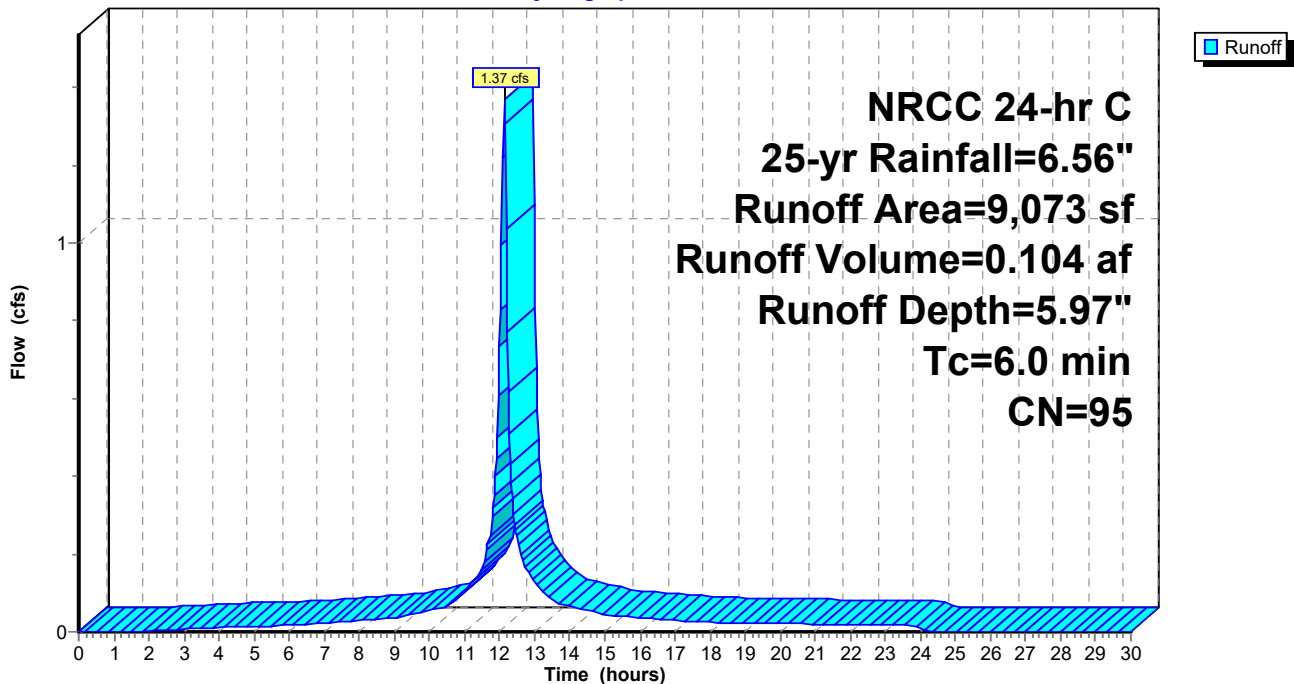
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
7,450	98	Paved parking, HSG D
440	80	>75% Grass cover, Good, HSG D
* 1,183	79	Landscaping, Good, HSG D
9,073	95	Weighted Average
1,623		17.89% Pervious Area
7,450		82.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-10: CCB 28

Hydrograph



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Summary for Subcatchment PR-11: Building Roof

Runoff = 12.29 cfs @ 12.13 hrs, Volume= 0.968 af, Depth= 6.32"
Routed to Reach R1 : Roof Leader

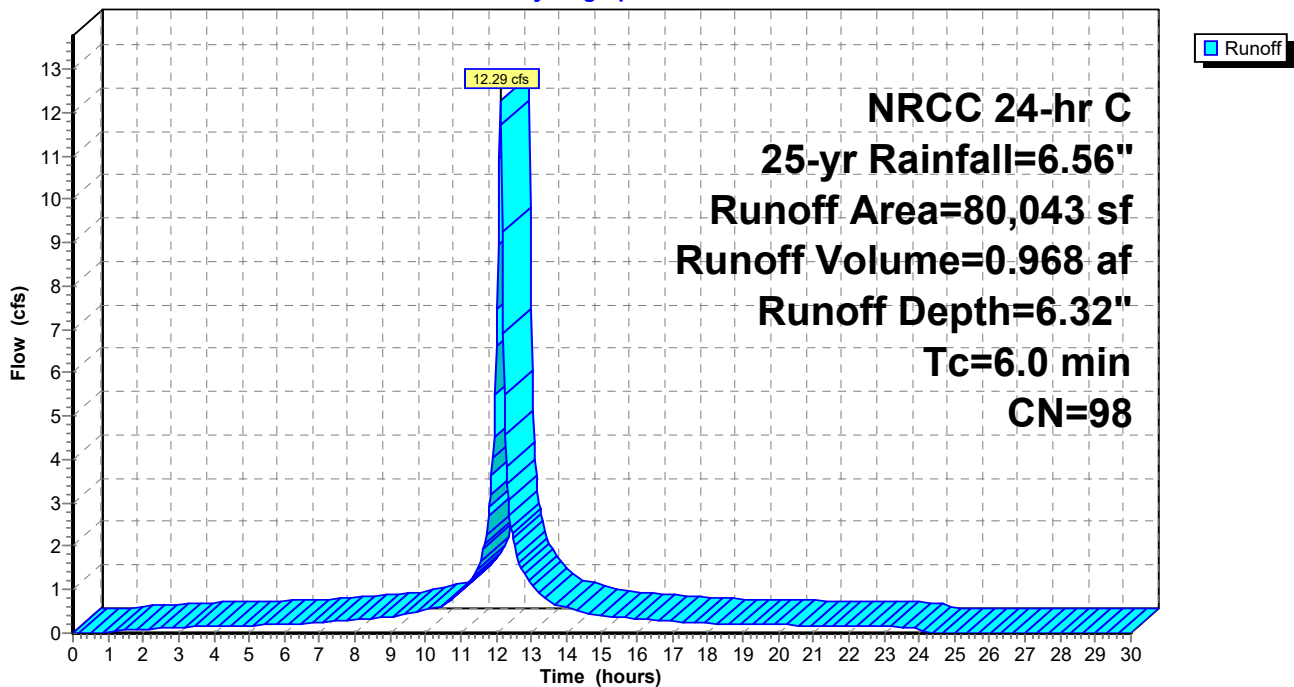
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
80,043	98	Roofs, HSG D
80,043		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-11: Building Roof

Hydrograph



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Summary for Subcatchment PR-12: CCB 29

Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.012 af, Depth= 6.32"
Routed to Reach R2 : Site Stormwater System

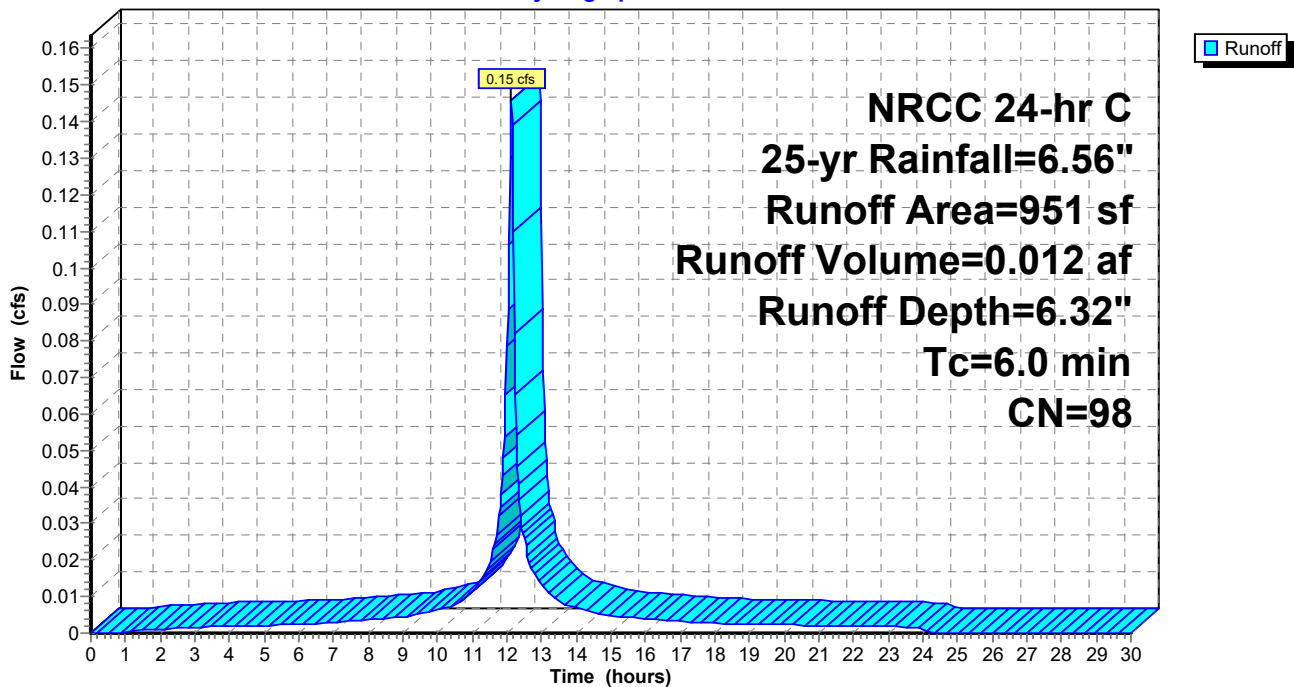
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
951	98	Paved parking, HSG D
951		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-12: CCB 29

Hydrograph



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Summary for Subcatchment PR-13: CCB 30

Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.012 af, Depth= 6.32"
Routed to Reach R2 : Site Stormwater System

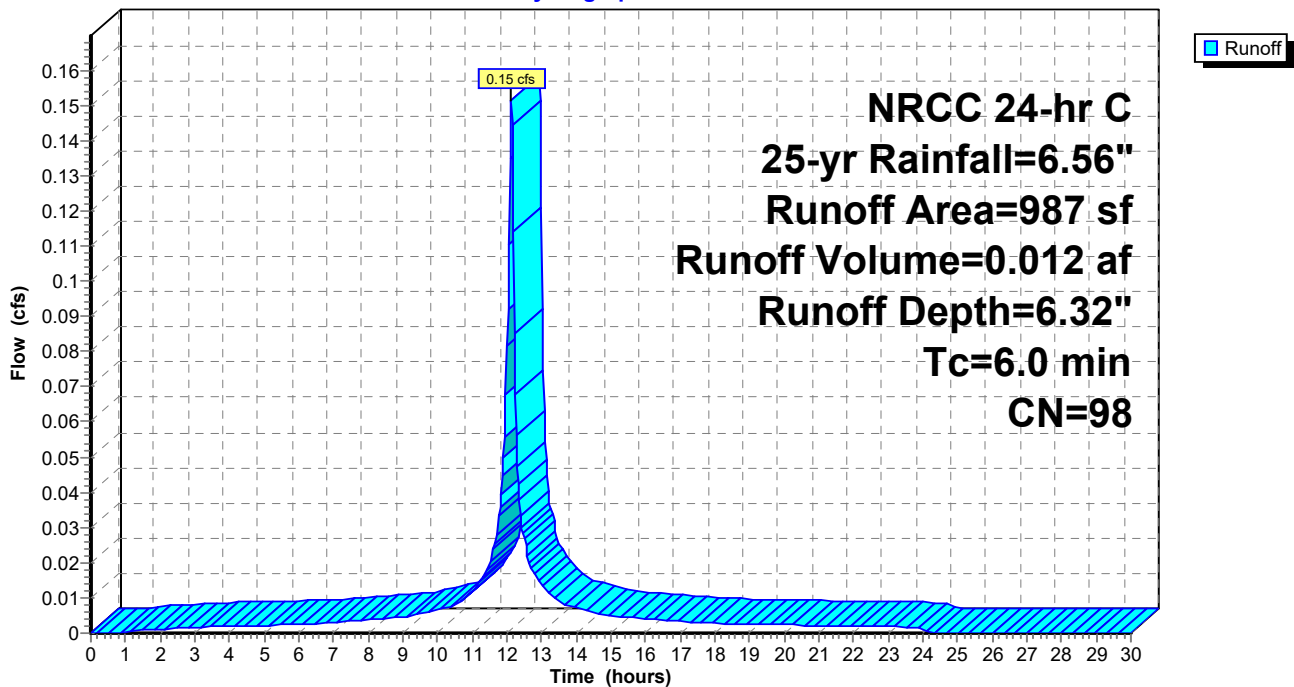
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
987	98	Paved parking, HSG D
987		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-13: CCB 30

Hydrograph



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Summary for Subcatchment PR-14: CLCB-10

Runoff = 0.26 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 6.09"
Routed to Reach R3 : East Stormwater System

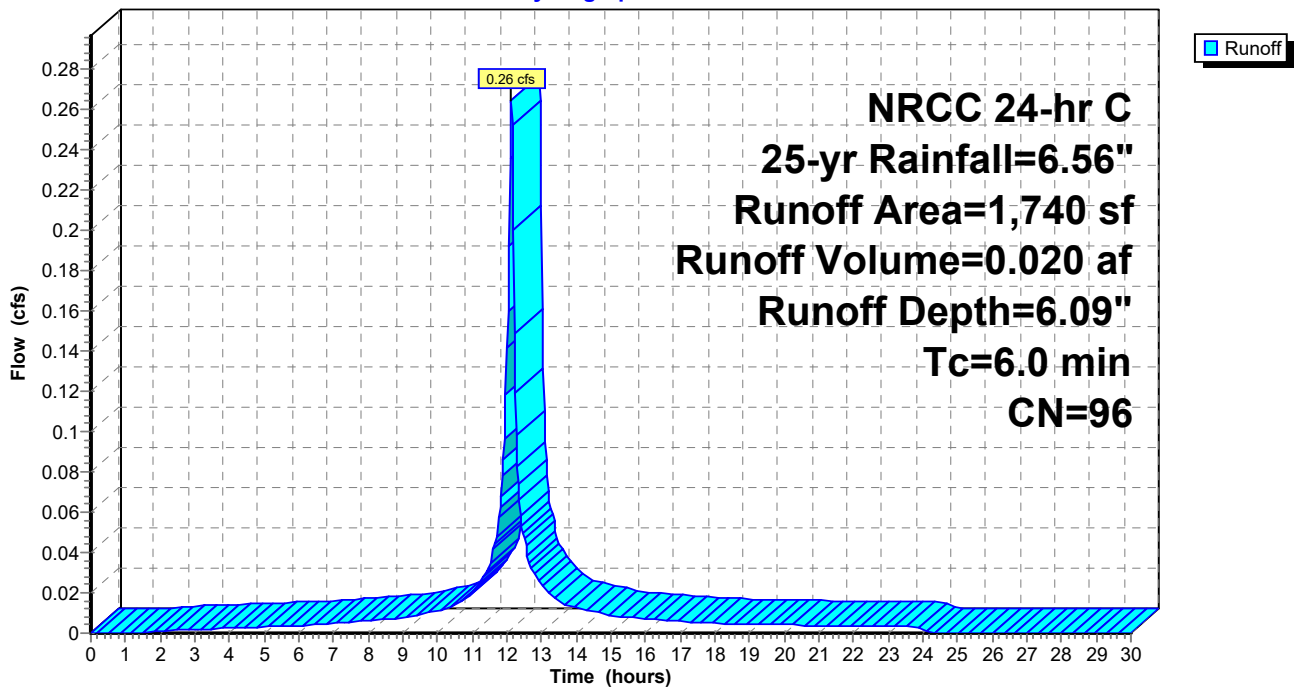
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
* 1,740	96	Concrete paver, HSG D
1,740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-14: CLCB-10

Hydrograph



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Summary for Subcatchment PR-15: CLCB-09

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 6.09"
Routed to Reach R3 : East Stormwater System

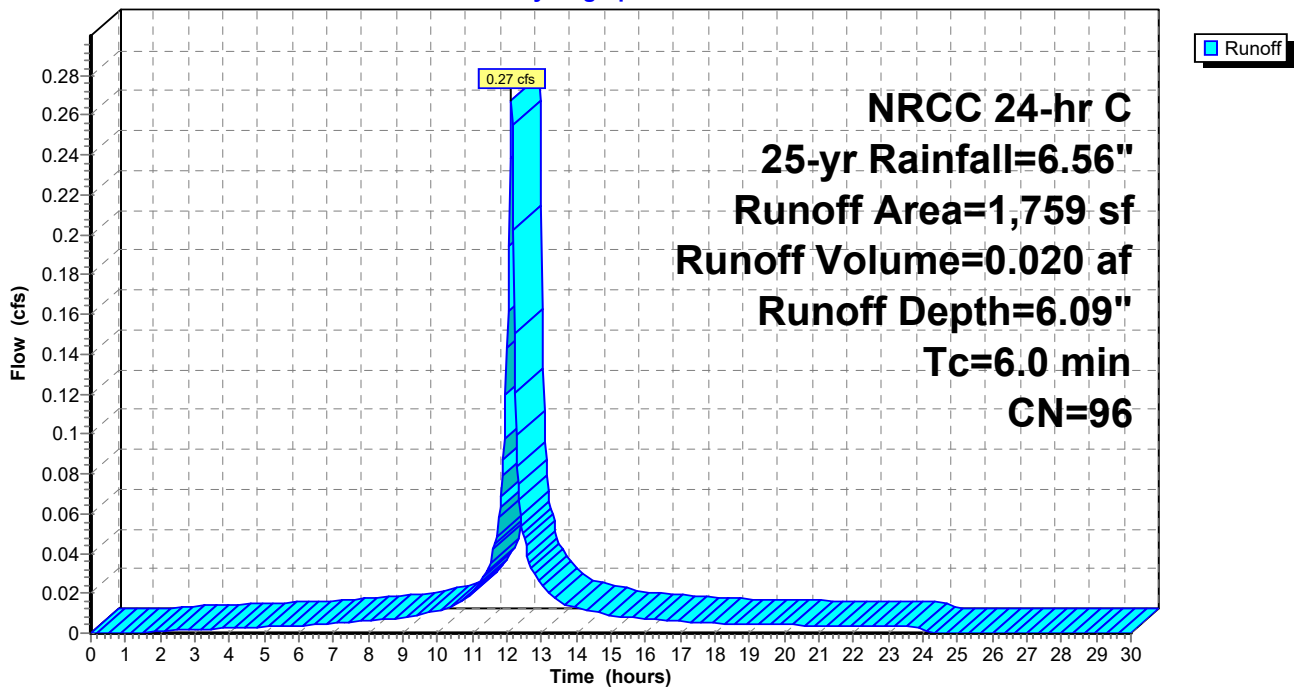
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
* 1,759	96	Pevious paver, HSG D
1,759		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-15: CLCB-09

Hydrograph



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Summary for Subcatchment PR-16: East rooftop

Runoff = 0.49 cfs @ 12.13 hrs, Volume= 0.039 af, Depth= 6.32"
Routed to Pond AP-2 : Front Lawn Rain Garden

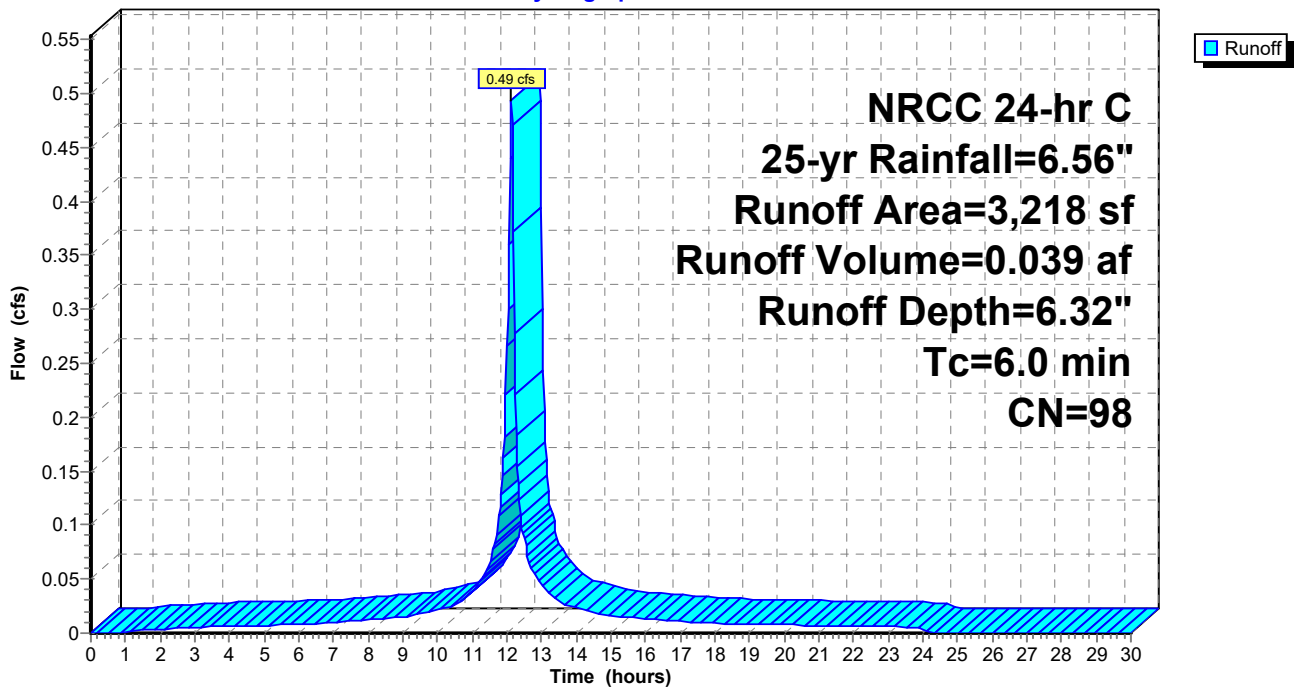
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
3,218	98	Roofs, HSG D
3,218		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-16: East rooftop

Hydrograph



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Summary for Subcatchment PR-17: Front Lawn

Runoff = 2.16 cfs @ 12.13 hrs, Volume= 0.147 af, Depth= 4.40"
 Routed to Pond AP-2 : Front Lawn Rain Garden

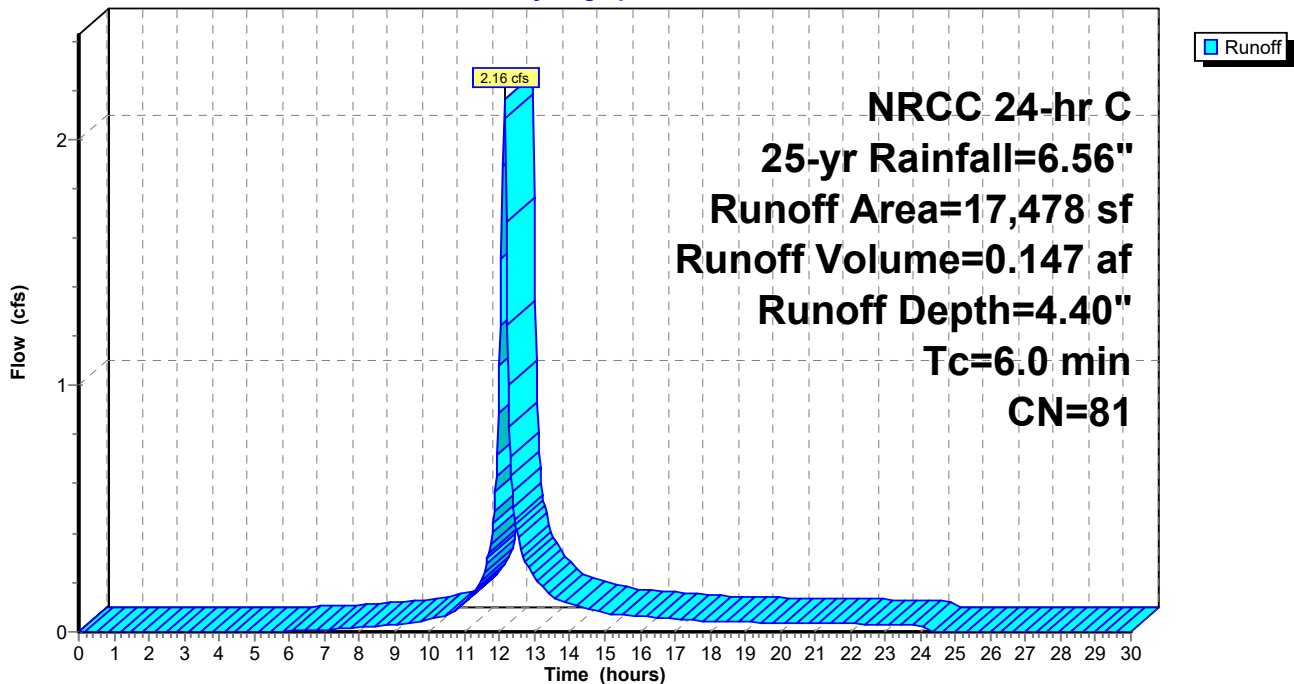
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
1,883	98	Paved parking, HSG D
6,950	80	>75% Grass cover, Good, HSG D
* 8,645	79	Landscaping, Good, HSG D
17,478	81	Weighted Average
15,595		89.23% Pervious Area
1,883		10.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-17: Front Lawn

Hydrograph



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Summary for Subcatchment PR-18: CCB-08

Runoff = 0.42 cfs @ 12.13 hrs, Volume= 0.030 af, Depth= 5.17"
 Routed to Reach R3 : East Stormwater System

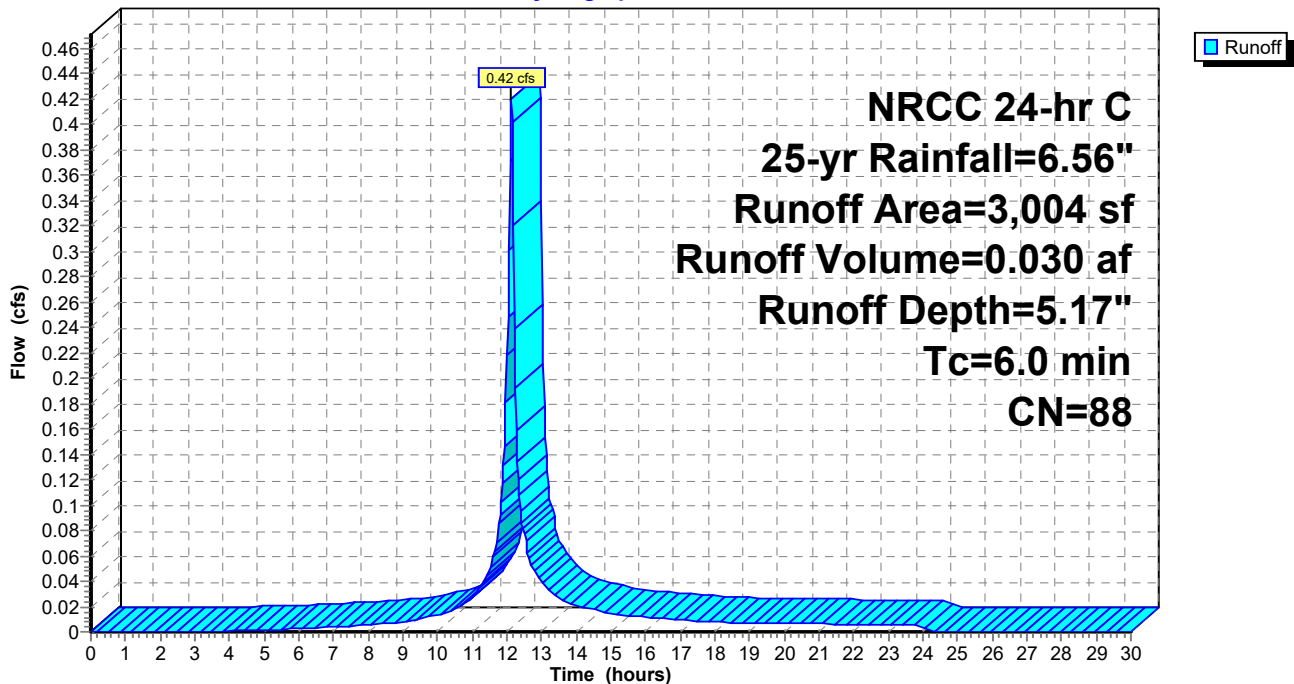
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
1,482	98	Paved parking, HSG D
192	80	>75% Grass cover, Good, HSG D
* 1,330	79	Landscaping, Good, HSG D
3,004	88	Weighted Average
1,522		50.67% Pervious Area
1,482		49.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-18: CCB-08

Hydrograph



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Summary for Subcatchment PR-19: CCB-07

Runoff = 0.16 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 6.32"
Routed to Reach R3 : East Stormwater System

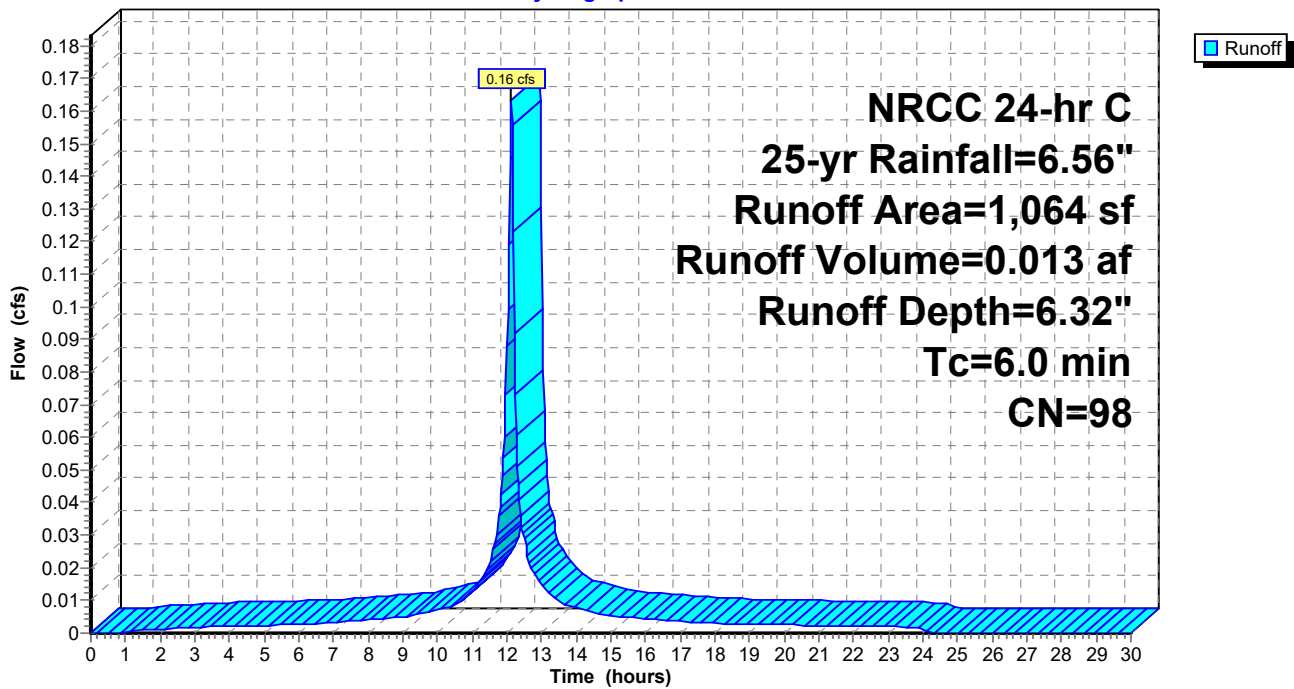
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
1,064	98	Paved parking, HSG D
1,064		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-19: CCB-07

Hydrograph



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Summary for Subcatchment PR-2: CCB 10

Runoff = 1.31 cfs @ 12.13 hrs, Volume= 0.096 af, Depth= 5.62"
Routed to Reach R2 : Site Stormwater System

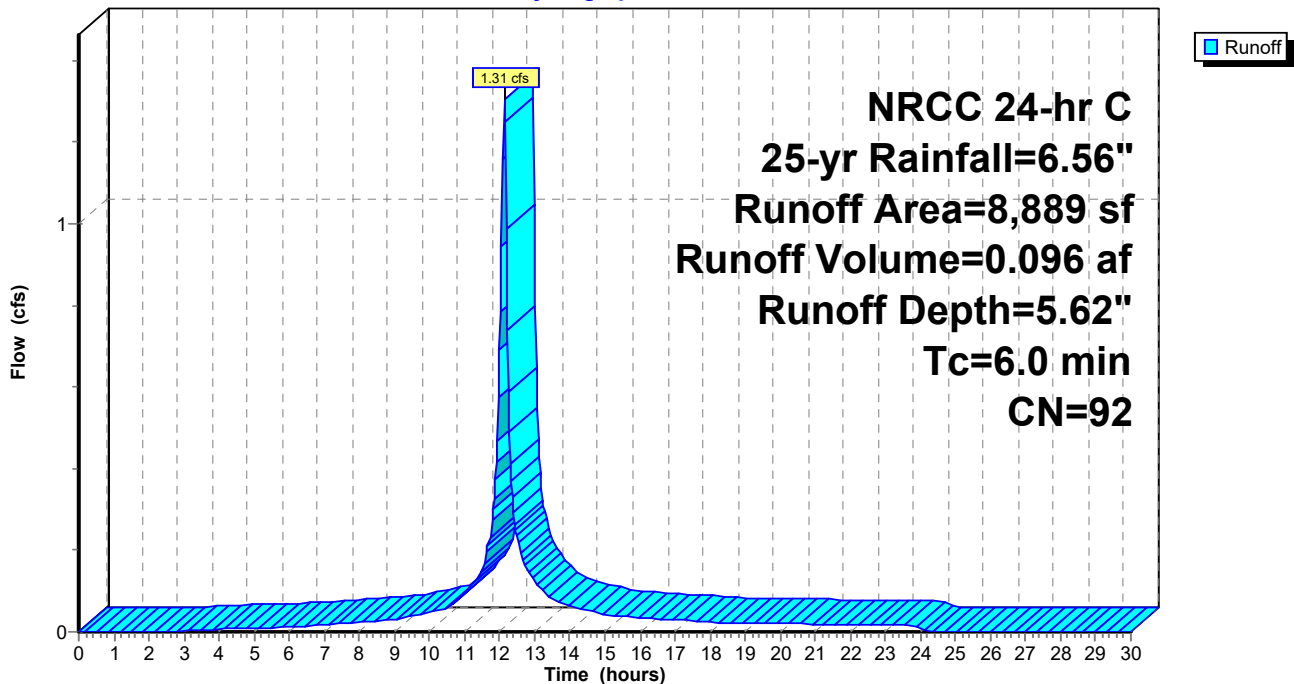
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	6,733	98	Paved parking, HSG C
*	1,772	72	Landscaping, Good, HSG C
	384	74	>75% Grass cover, Good, HSG C
	8,889	92	Weighted Average
	2,156		24.25% Pervious Area
	6,733		75.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-2: CCB 10

Hydrograph



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Summary for Subcatchment PR-20: South of entrance drive

Runoff = 0.75 cfs @ 12.13 hrs, Volume= 0.051 af, Depth= 4.18"
 Routed to Pond AP-4 : Landscaped Area

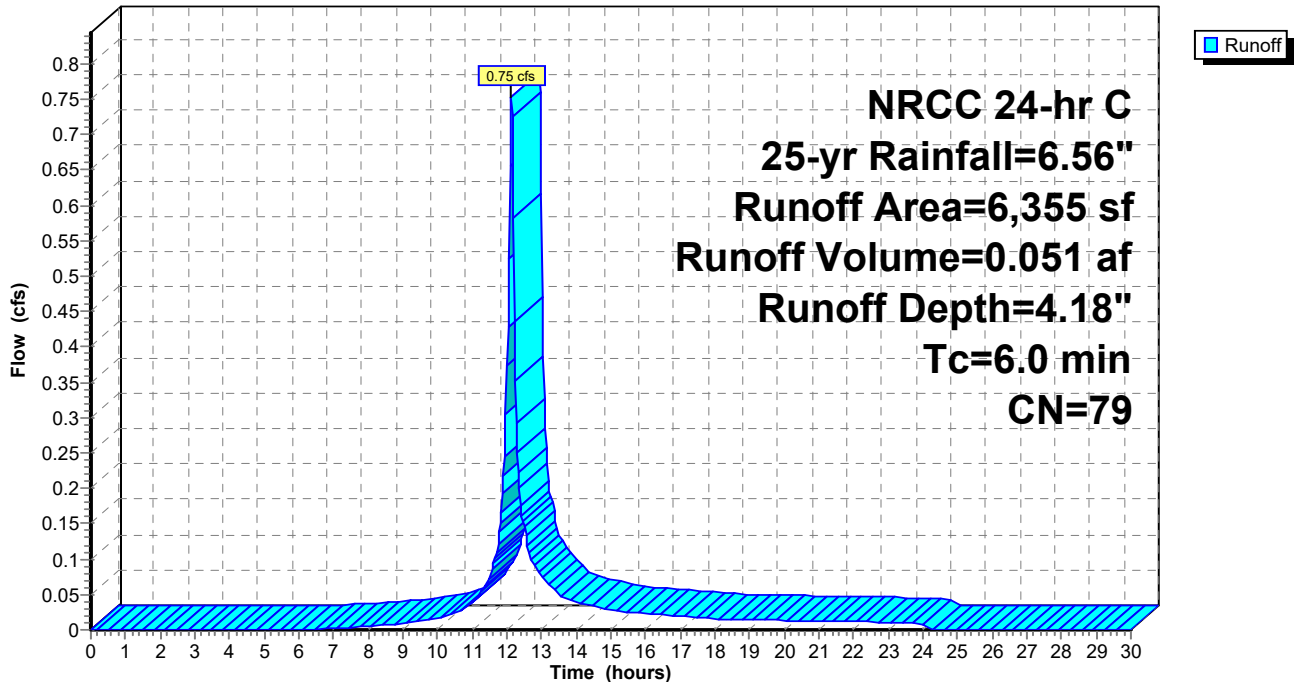
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
93	98	Paved parking, HSG D
755	80	>75% Grass cover, Good, HSG D
* 5,507	79	Landscaping, Good, HSG D
6,355	79	Weighted Average
6,262		98.54% Pervious Area
93		1.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-20: South of entrance drive

Hydrograph



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Summary for Subcatchment PR-21: Danbury Rd

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.014 af, Depth= 6.32"
Routed to Pond AP-3 : Danbury Road

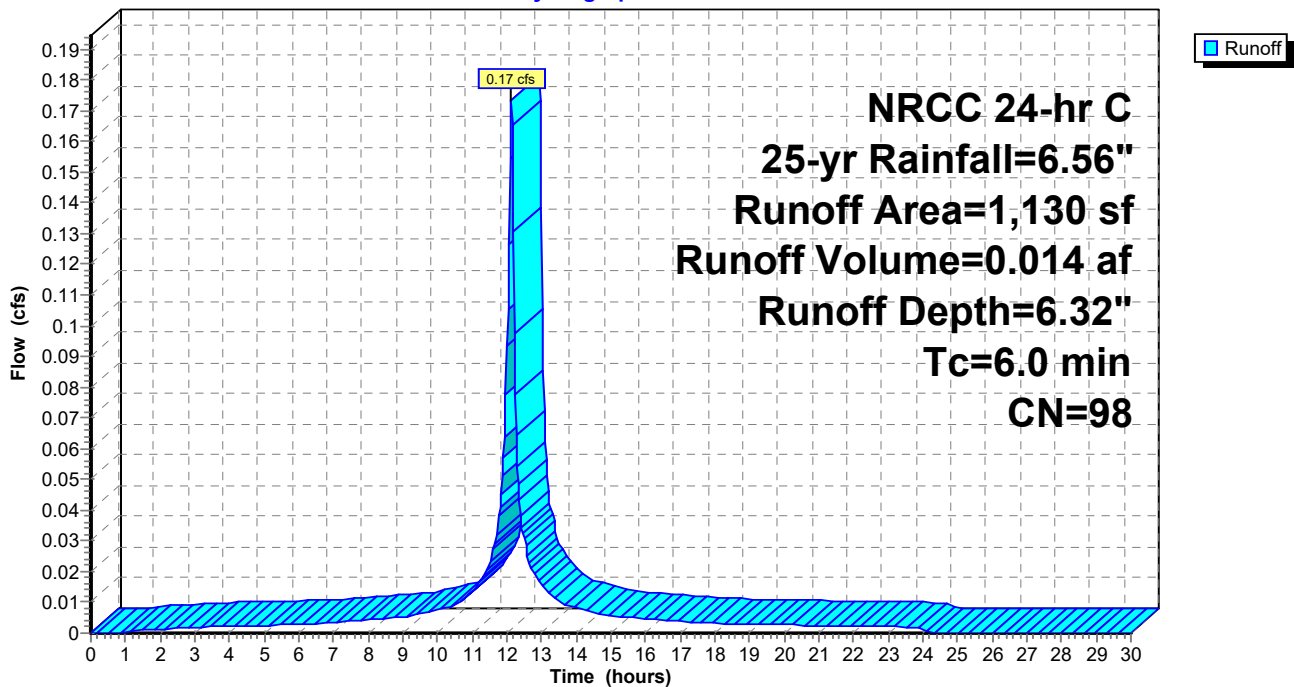
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
1,130	98	Paved parking, HSG D
1,130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-21: Danbury Rd

Hydrograph



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Summary for Subcatchment PR-3: CCB 07

Runoff = 0.78 cfs @ 12.13 hrs, Volume= 0.060 af, Depth= 6.09"
Routed to Reach R2 : Site Stormwater System

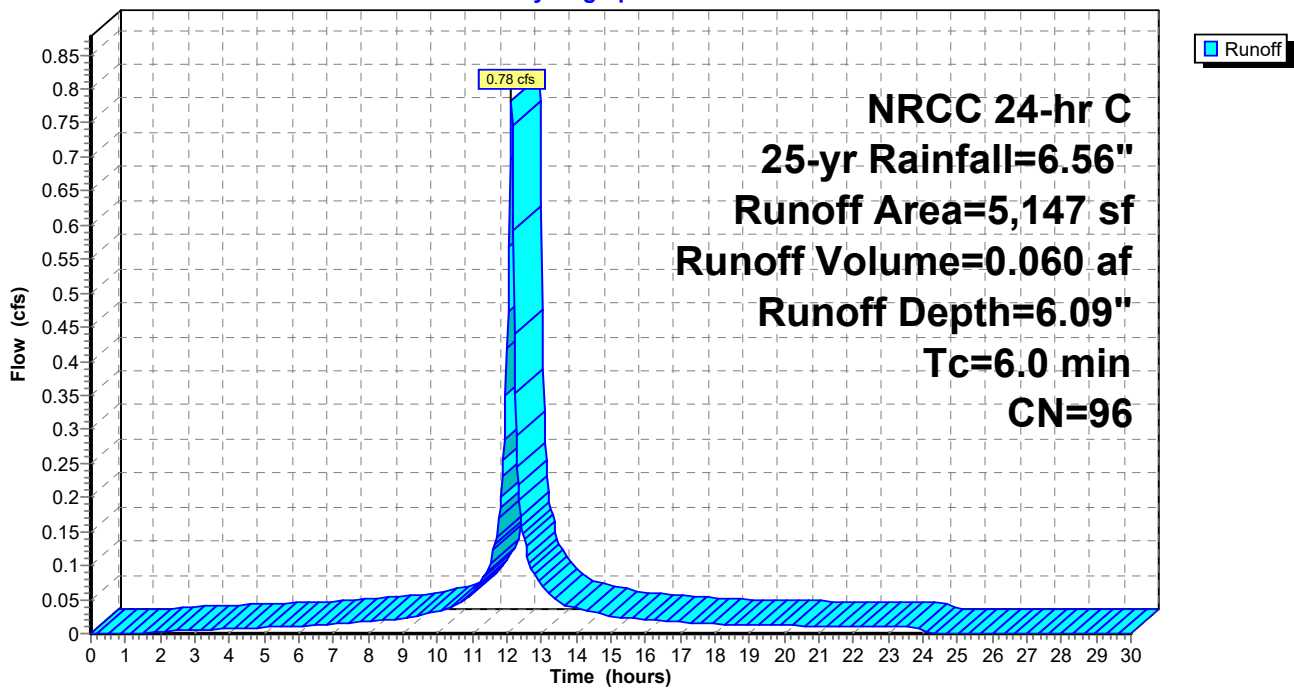
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	4,715	98	Paved parking, HSG C
*	432	72	Landscaping, Good, HSG C
	5,147	96	Weighted Average
	432		8.39% Pervious Area
	4,715		91.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-3: CCB 07

Hydrograph



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Summary for Subcatchment PR-4: CCB 06

Runoff = 0.32 cfs @ 12.13 hrs, Volume= 0.025 af, Depth= 6.20"
Routed to Reach R2 : Site Stormwater System

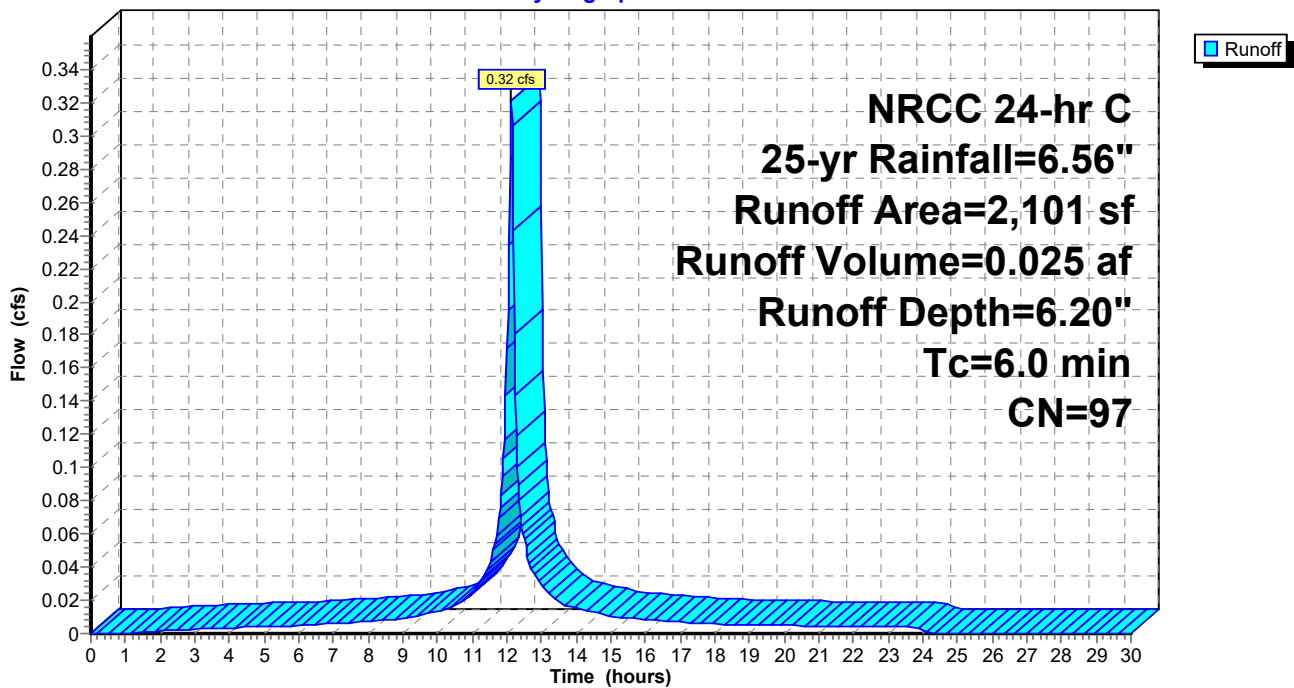
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
2,026	98	Paved parking, HSG D
* 75	79	Landscaping, Good, HSG D
2,101	97	Weighted Average
75		3.57% Pervious Area
2,026		96.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assigned minimum

Subcatchment PR-4: CCB 06

Hydrograph



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Summary for Subcatchment PR-5: South Basin

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.044 af, Depth= 4.61"
 Routed to Pond B-1 : South Basin

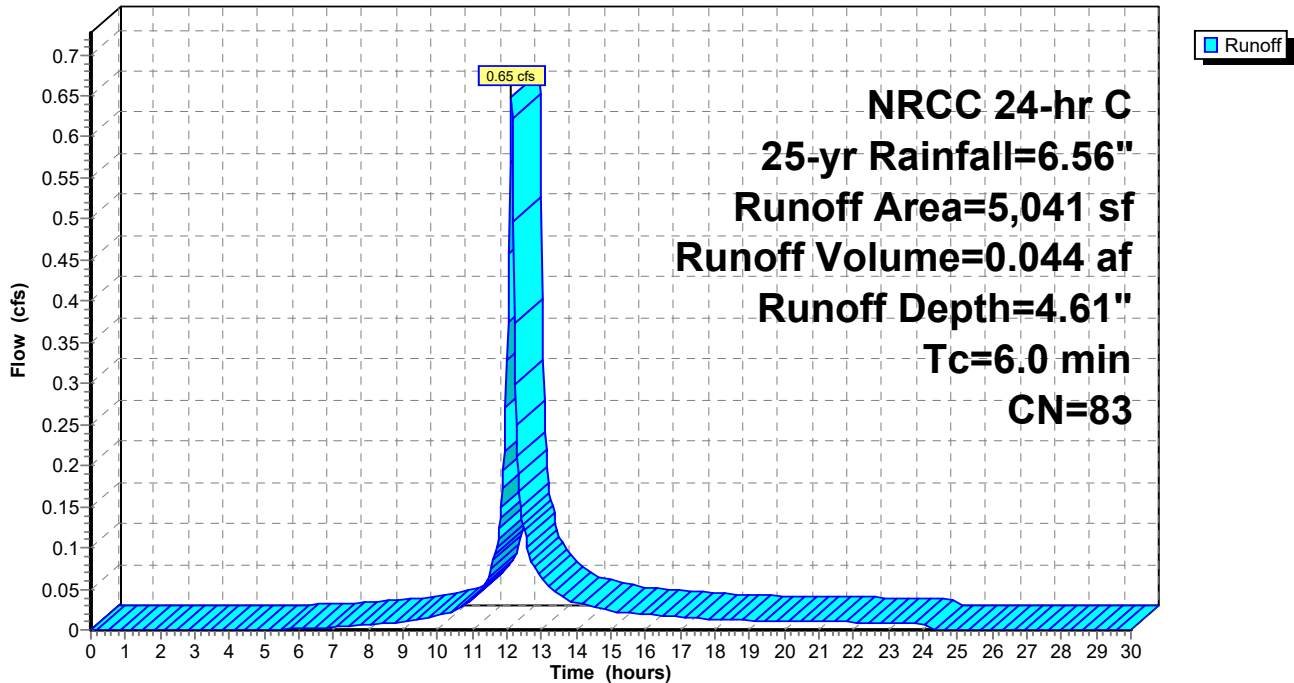
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	595	96	Permeable Paver, HSG C
*	366	96	Gravel surface, HSG C
*	2,205	72	Landscaping, Good, HSG C
*	890	98	Paved parking, HSG C
	985	80	>75% Grass cover, Good, HSG D
	5,041	83	Weighted Average
	4,151		82.34% Pervious Area
	890		17.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-5: South Basin

Hydrograph



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Summary for Subcatchment PR-6: West along river

Runoff = 2.49 cfs @ 12.13 hrs, Volume= 0.171 af, Depth= 4.72"
 Routed to Pond AP-1 : Norwalk River

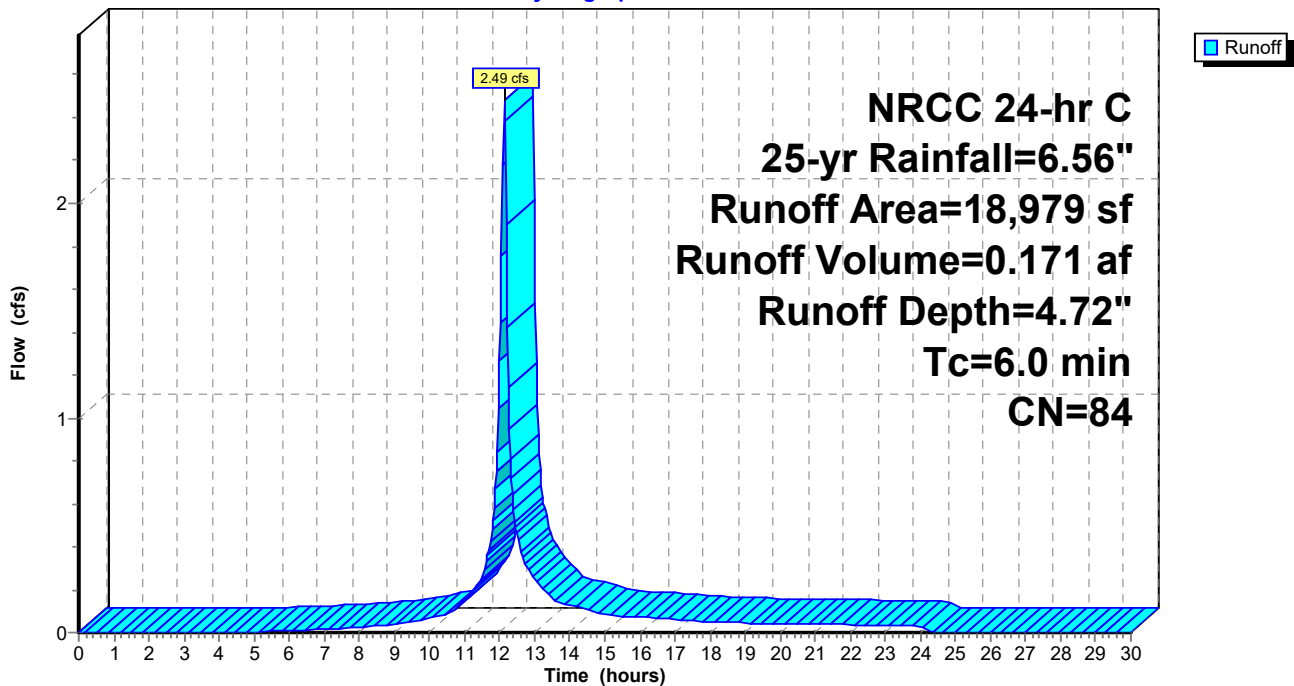
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

	Area (sf)	CN	Description
*	4,195	96	Permeable paver, HSG D
	461	96	Gravel surface, HSG D
	911	98	Paved parking, HSG D
	2,775	80	>75% Grass cover, Good, HSG D
*	6,489	79	Landscaping, Good, HSG D
	4,148	77	Woods, Good, HSG D
	18,979	84	Weighted Average
	18,068		95.20% Pervious Area
	911		4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-6: West along river

Hydrograph



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Summary for Subcatchment PR-7: North basin

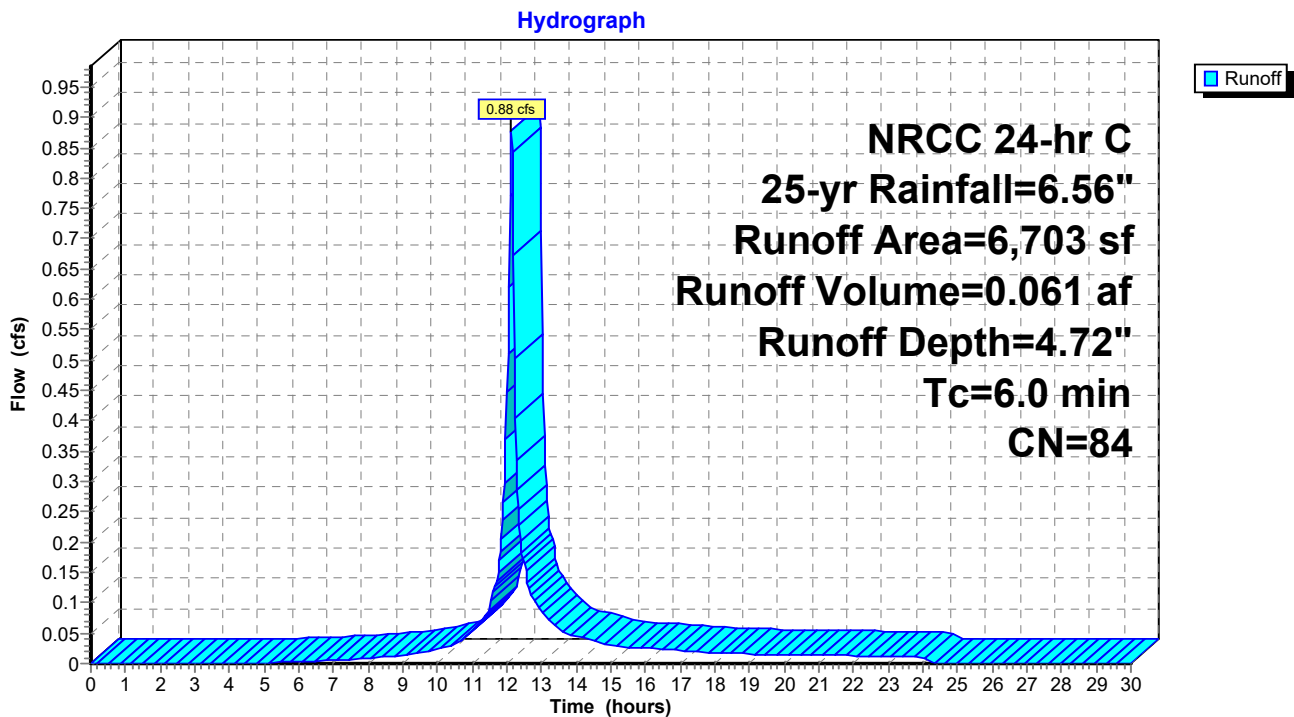
Runoff = 0.88 cfs @ 12.13 hrs, Volume= 0.061 af, Depth= 4.72"
Routed to Pond B-2 : North Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
453	96	Gravel surface, HSG D
* 1,031	96	Permeable paver, HSG D
445	80	>75% Grass cover, Good, HSG D
* 3,601	79	Landscaping, Good, HSG D
692	77	Woods, Good, HSG D
481	98	Paved parking, HSG D
6,703	84	Weighted Average
6,222		92.82% Pervious Area
481		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7: North basin



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Summary for Subcatchment PR-7B: CCB 26

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.048 af, Depth= 5.85"
Routed to Reach R2 : Site Stormwater System

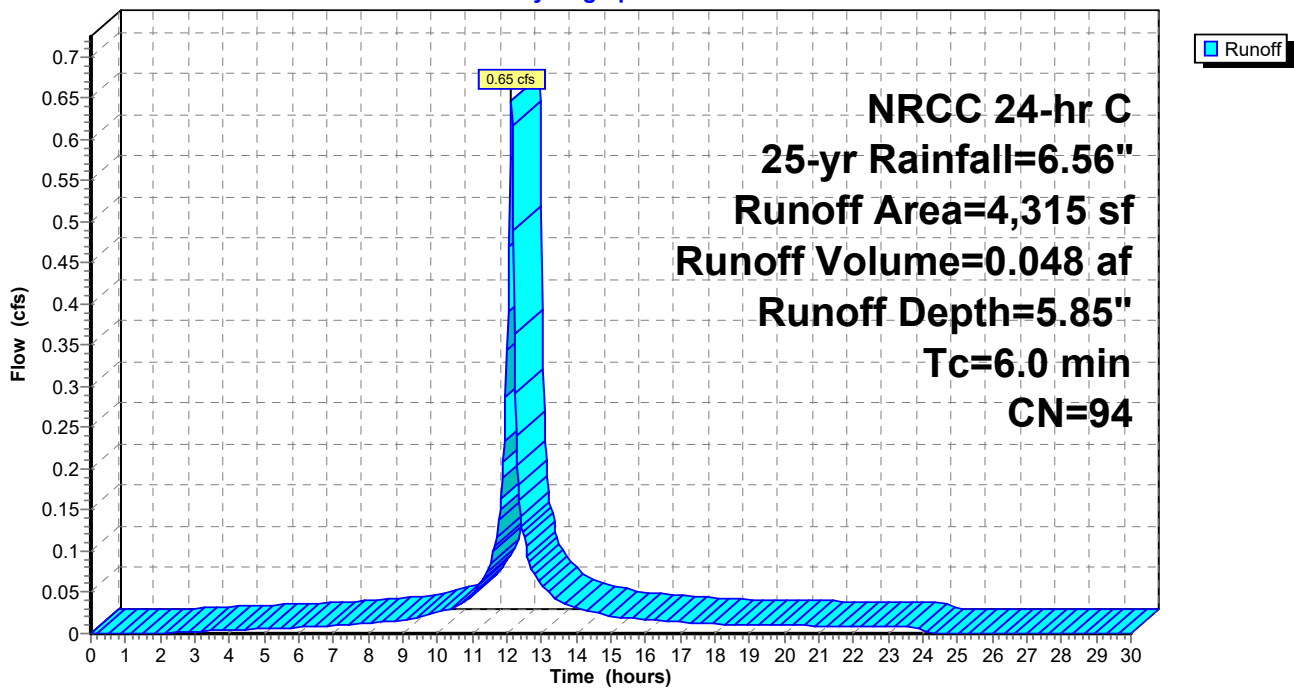
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
3,518	98	Paved parking, HSG D
* 797	79	Landscaping, Good, HSG D
4,315	94	Weighted Average
797		18.47% Pervious Area
3,518		81.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7B: CCB 26

Hydrograph



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Summary for Subcatchment PR-8: CCB 26A

Runoff = 0.96 cfs @ 12.13 hrs, Volume= 0.071 af, Depth= 5.74"
Routed to Reach R2 : Site Stormwater System

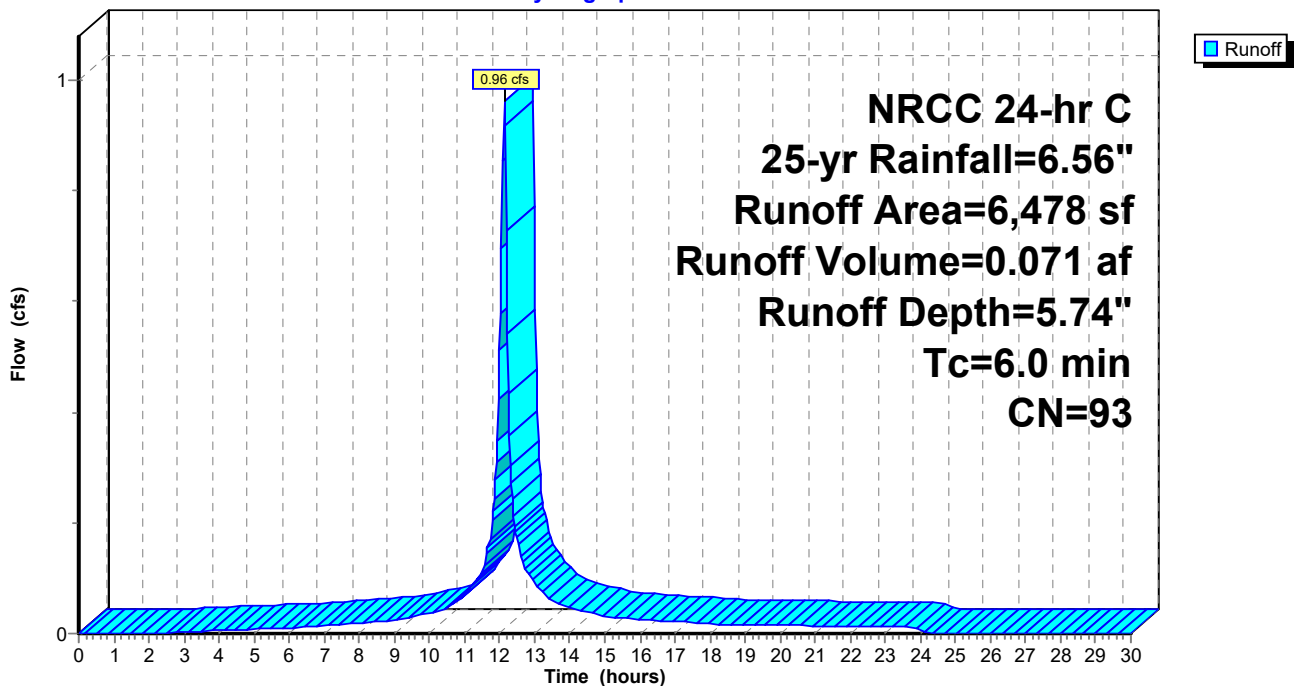
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
4,737	98	Paved parking, HSG D
* 1,741	79	Landscaping, Good, HSG D
6,478	93	Weighted Average
1,741		26.88% Pervious Area
4,737		73.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-8: CCB 26A

Hydrograph



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Summary for Subcatchment PR-9: CCB 27

Runoff = 1.78 cfs @ 12.13 hrs, Volume= 0.124 af, Depth= 4.94"
 Routed to Reach R2 : Site Stormwater System

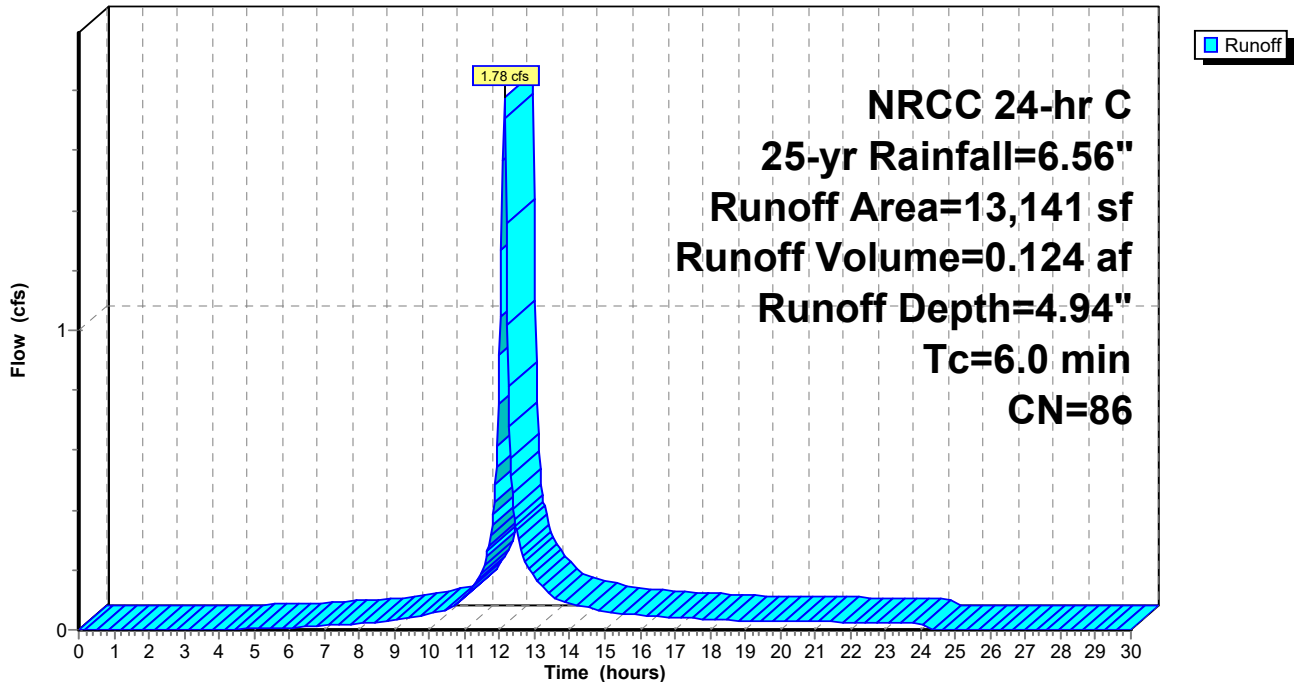
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 25-yr Rainfall=6.56"

Area (sf)	CN	Description
4,730	98	Paved parking, HSG D
817	80	>75% Grass cover, Good, HSG D
* 7,594	79	Landscaping, Good, HSG D
13,141	86	Weighted Average
8,411		64.01% Pervious Area
4,730		35.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-9: CCB 27

Hydrograph



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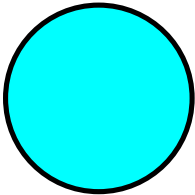
Summary for Reach R1: Roof Leader

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 6.32" for 25-yr event
Inflow = 12.29 cfs @ 12.13 hrs, Volume= 0.968 af
Outflow = 1.40 cfs @ 11.39 hrs, Volume= 0.968 af, Atten= 89%, Lag= 0.0 min
Routed to Pond S-2 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.28 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.95 fps, Avg. Travel Time= 0.1 min

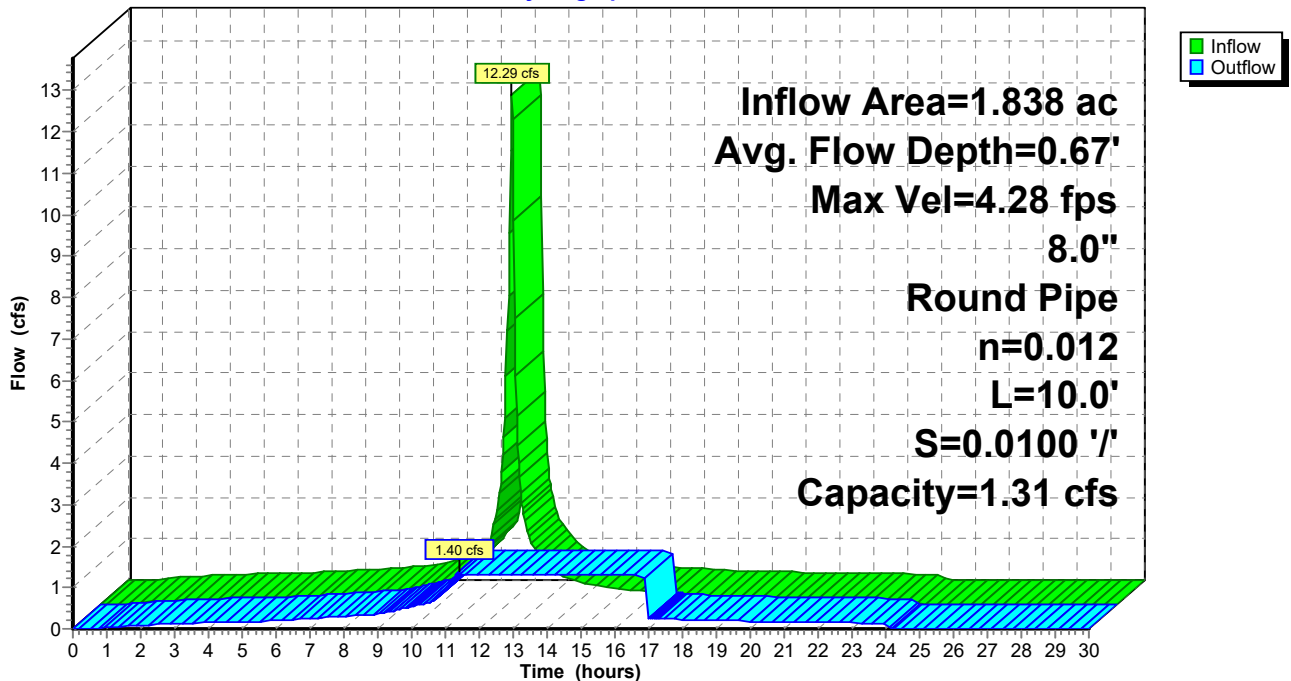
Peak Storage= 3 cf @ 11.43 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 0.00'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 10.0' Slope= 0.0100 '/'
Inlet Invert= 142.20', Outlet Invert= 142.10'



Reach R1: Roof Leader

Hydrograph

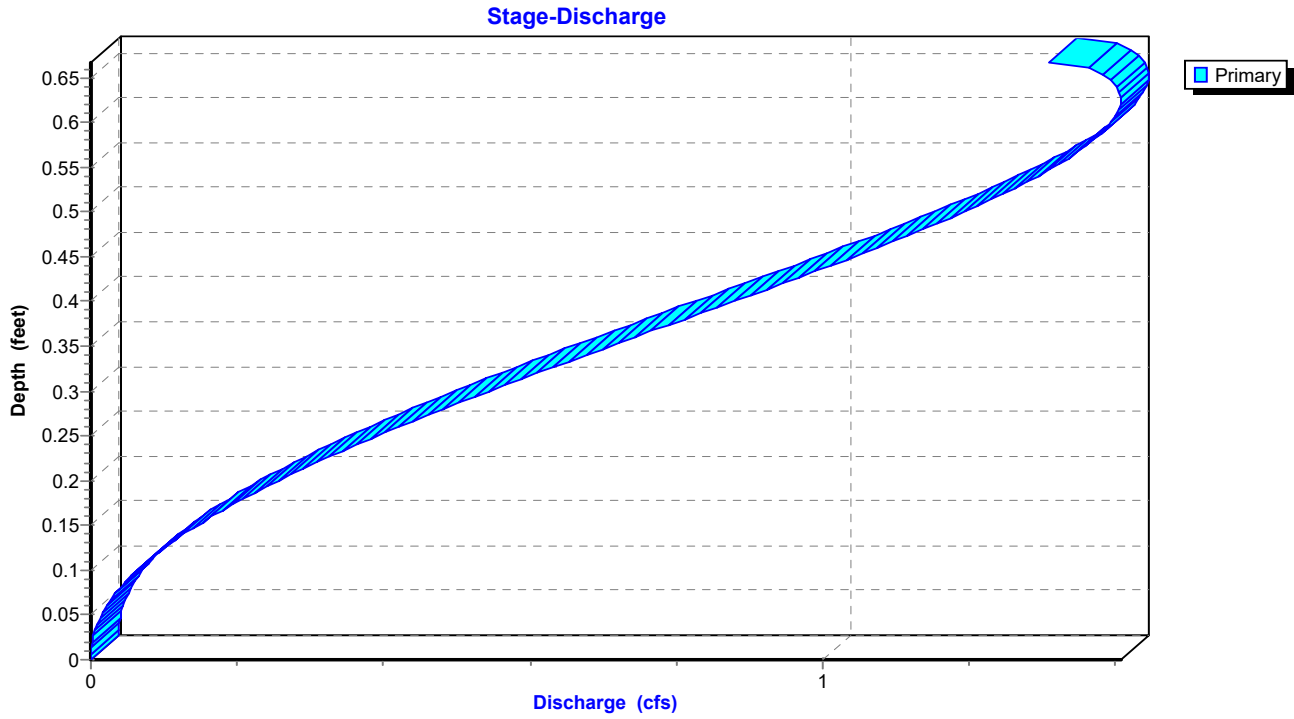


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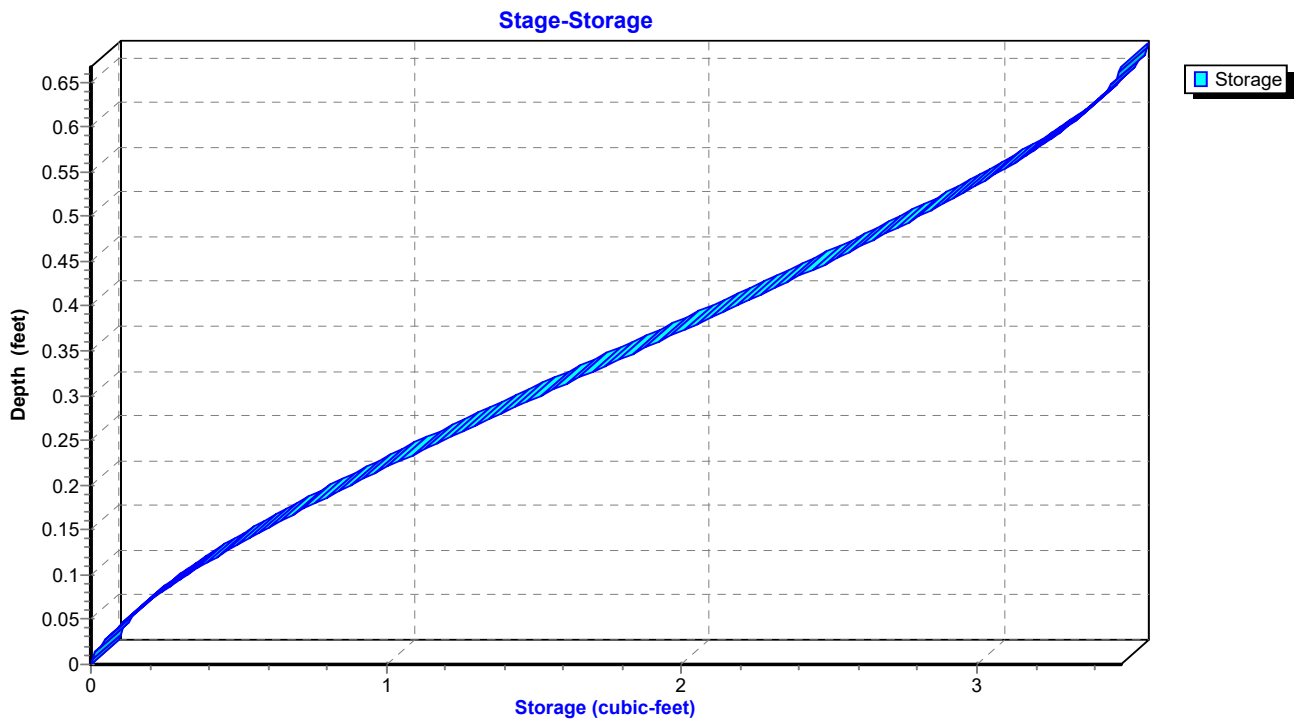
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Reach R1: Roof Leader



Reach R1: Roof Leader



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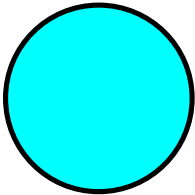
Summary for Reach R2: Site Stormwater System

Inflow Area = 1.221 ac, 71.23% Impervious, Inflow Depth = 5.66" for 25-yr event
Inflow = 7.80 cfs @ 12.13 hrs, Volume= 0.576 af
Outflow = 4.95 cfs @ 12.06 hrs, Volume= 0.576 af, Atten= 37%, Lag= 0.0 min
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.60 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 0.7 min

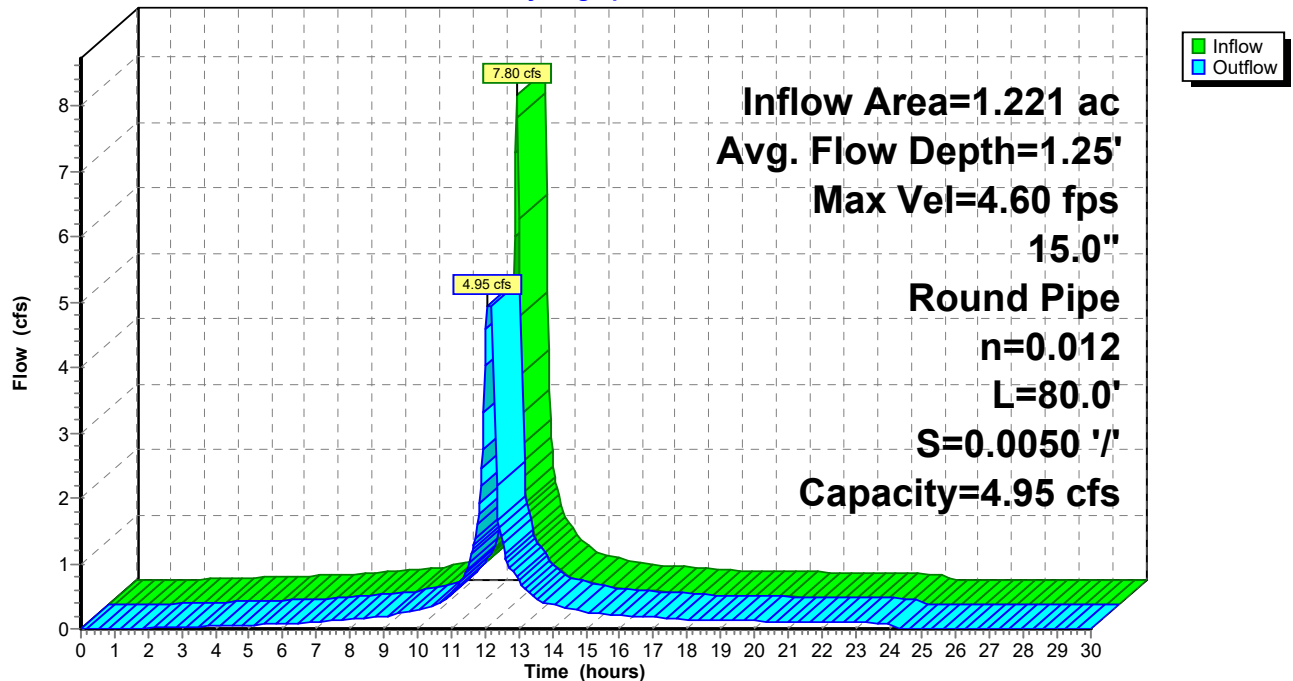
Peak Storage= 98 cf @ 12.06 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.95 cfs

15.0" Round Pipe
n= 0.012
Length= 80.0' Slope= 0.0050 '/'
Inlet Invert= 138.00', Outlet Invert= 137.60'



Reach R2: Site Stormwater System

Hydrograph

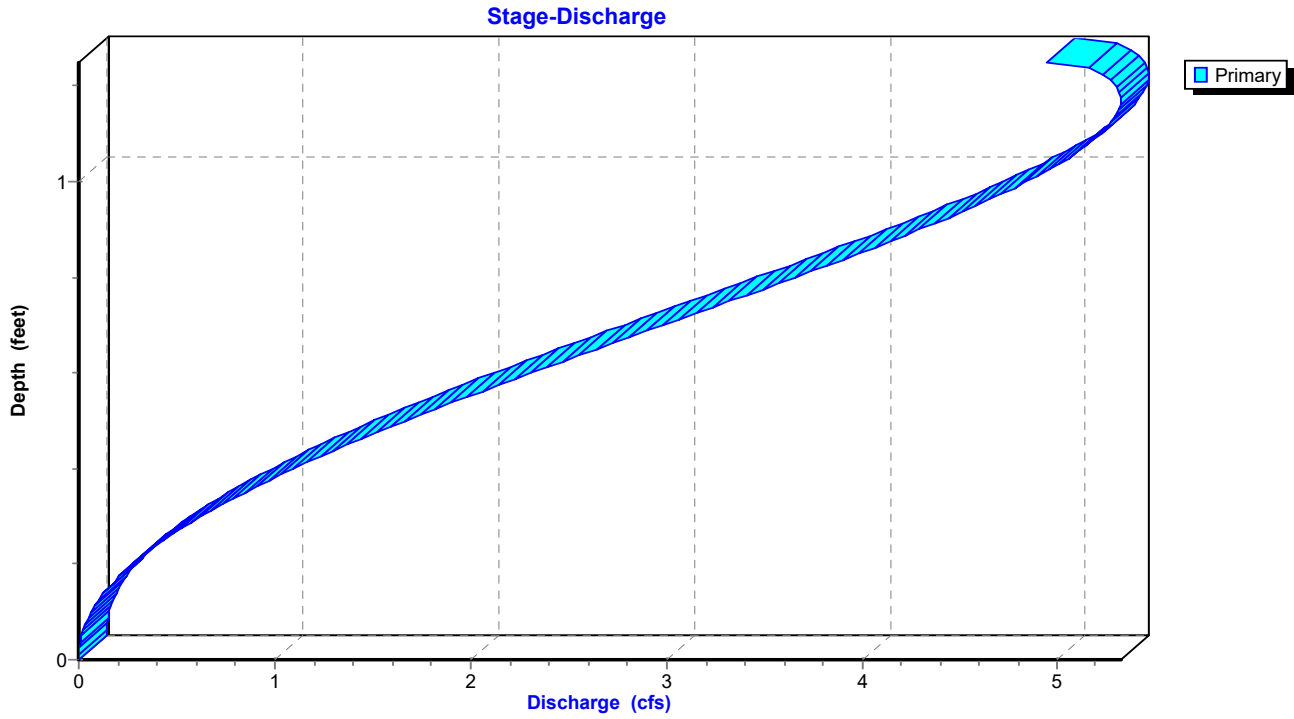


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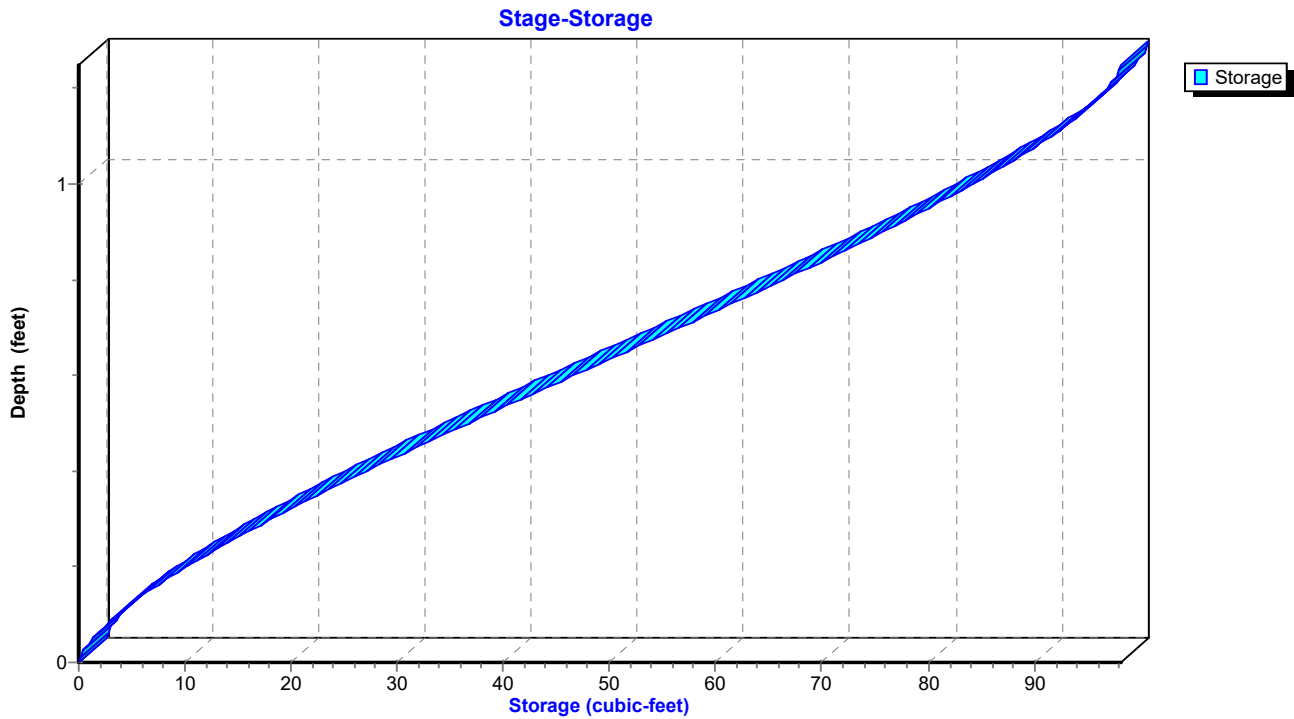
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Reach R2: Site Stormwater System



Reach R2: Site Stormwater System



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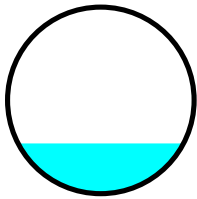
Summary for Reach R3: East Stormwater System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 2.13" for 25-yr event
Inflow = 1.12 cfs @ 12.13 hrs, Volume= 0.115 af
Outflow = 1.11 cfs @ 12.13 hrs, Volume= 0.115 af, Atten= 1%, Lag= 0.4 min
Routed to Pond S-1 : Subsurface Infiltration System

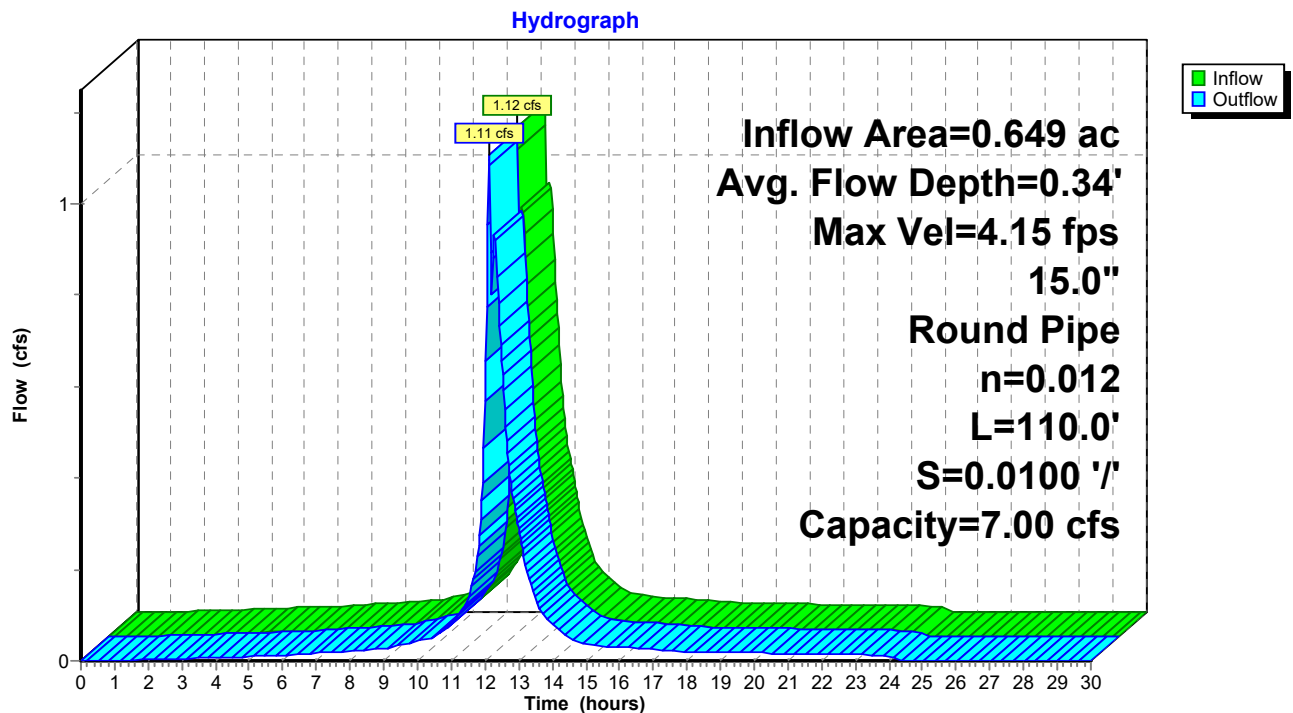
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.15 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.38 fps, Avg. Travel Time= 1.3 min

Peak Storage= 29 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 1.11'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe
n= 0.012
Length= 110.0' Slope= 0.0100 '/'
Inlet Invert= 144.80', Outlet Invert= 143.70'



Reach R3: East Stormwater System

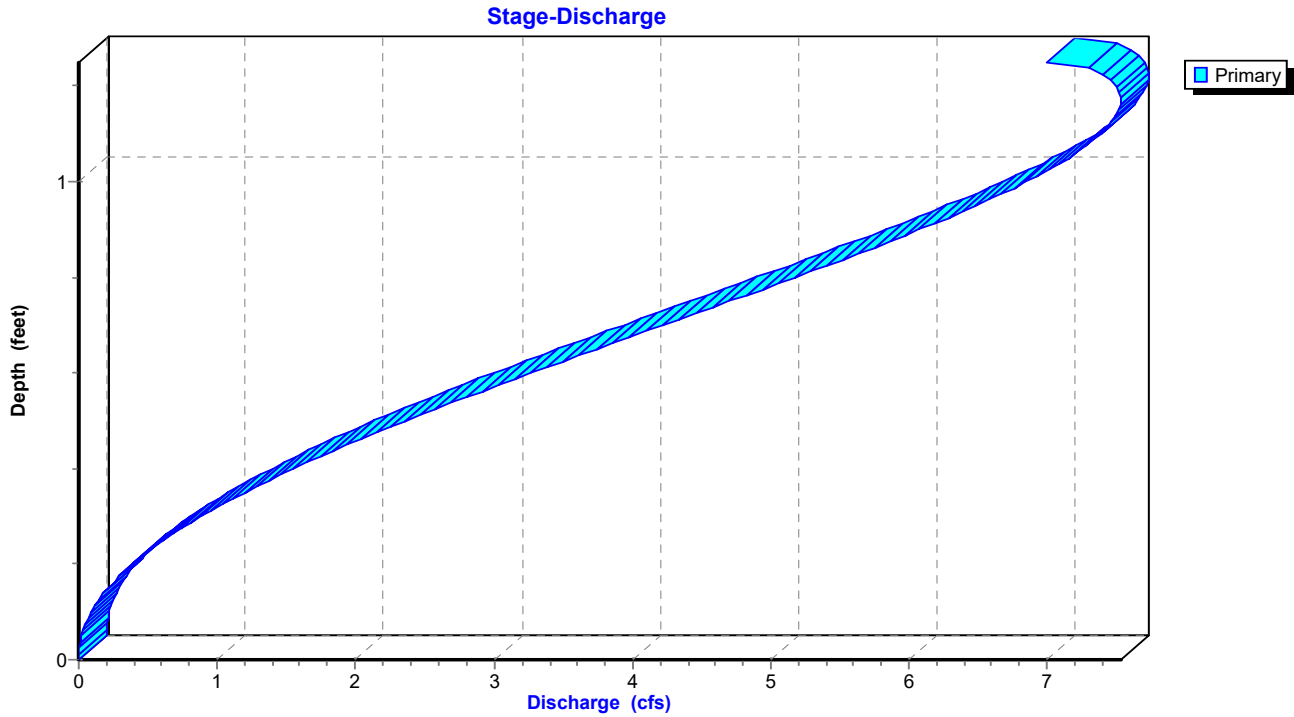


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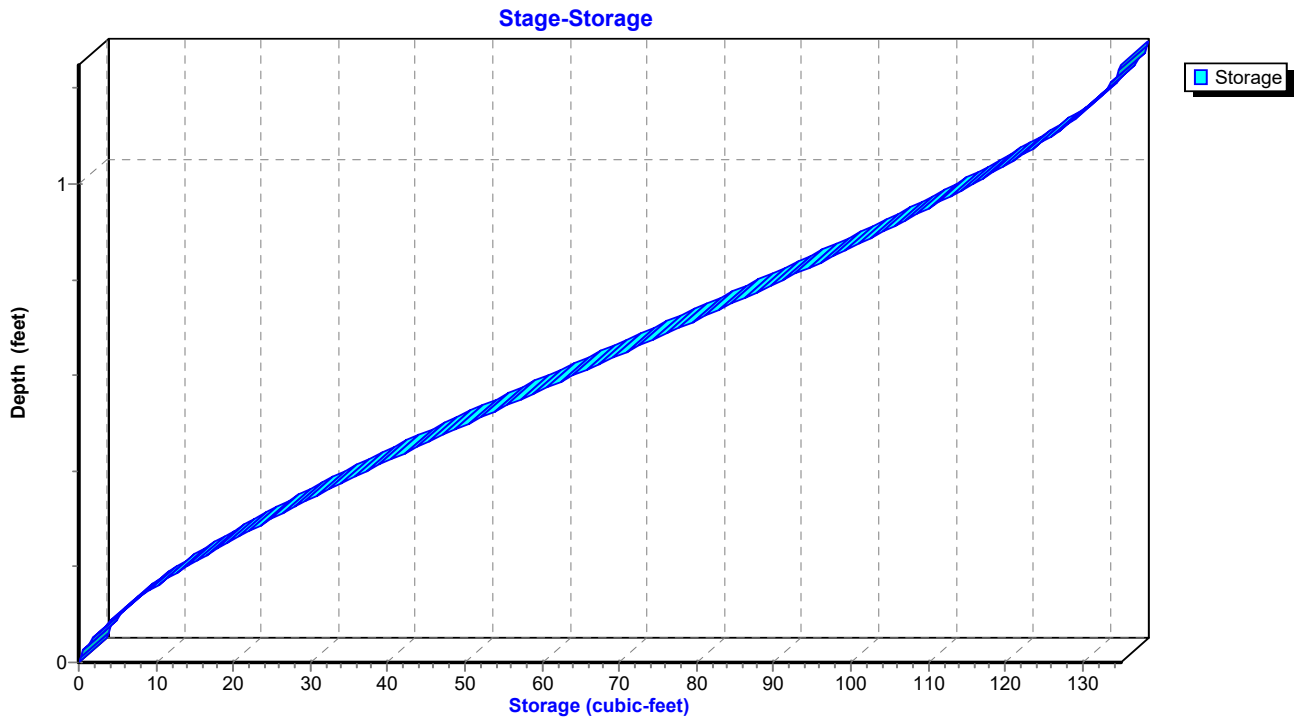
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Reach R3: East Stormwater System



Reach R3: East Stormwater System



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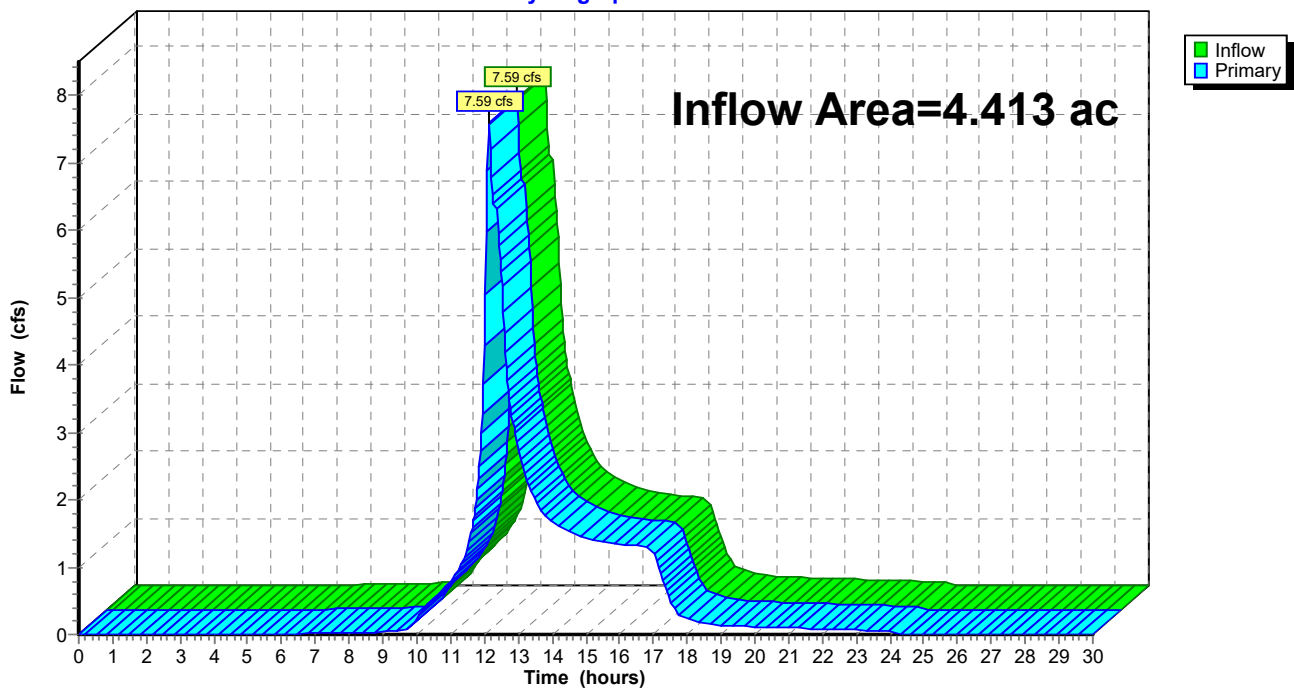
Summary for Pond AP-1: Norwalk River

Inflow Area = 4.413 ac, 66.52% Impervious, Inflow Depth = 3.32" for 25-yr event
Inflow = 7.59 cfs @ 12.14 hrs, Volume= 1.223 af
Primary = 7.59 cfs @ 12.14 hrs, Volume= 1.223 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



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Summary for Pond AP-2: Front Lawn Rain Garden

Inflow Area = 0.475 ac, 24.65% Impervious, Inflow Depth = 4.70" for 25-yr event
Inflow = 2.66 cfs @ 12.13 hrs, Volume= 0.186 af
Outflow = 0.75 cfs @ 12.34 hrs, Volume= 0.186 af, Atten= 72%, Lag= 12.7 min
Discarded = 0.15 cfs @ 12.34 hrs, Volume= 0.154 af
Primary = 0.61 cfs @ 12.34 hrs, Volume= 0.032 af
Routed to Reach R3 : East Stormwater System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 149.12' @ 12.34 hrs Surf.Area= 3,133 sf Storage= 2,754 cf

Plug-Flow detention time= 151.2 min calculated for 0.186 af (100% of inflow)
Center-of-Mass det. time= 151.1 min (951.9 - 800.8)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	6,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	1,985	0	0
149.00	2,833	2,409	2,409
150.00	5,420	4,127	6,536

Device	Routing	Invert	Outlet Devices
#1	Primary	141.00'	15.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 141.00' / 140.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	149.00'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	148.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.14 cfs @ 12.34 hrs HW=149.12' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.14 cfs)

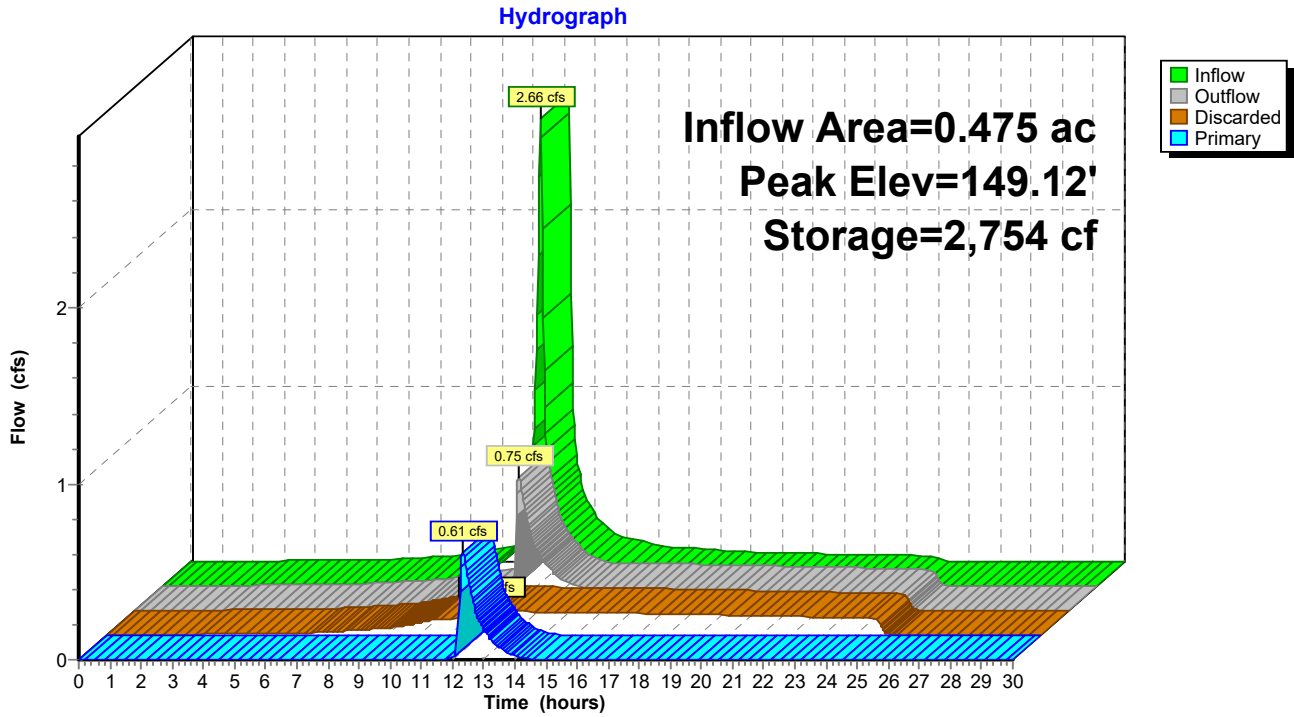
Primary OutFlow Max=0.60 cfs @ 12.34 hrs HW=149.12' (Free Discharge)
↑**1=Culvert** (Passes 0.60 cfs of 16.17 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.60 cfs @ 1.11 fps)

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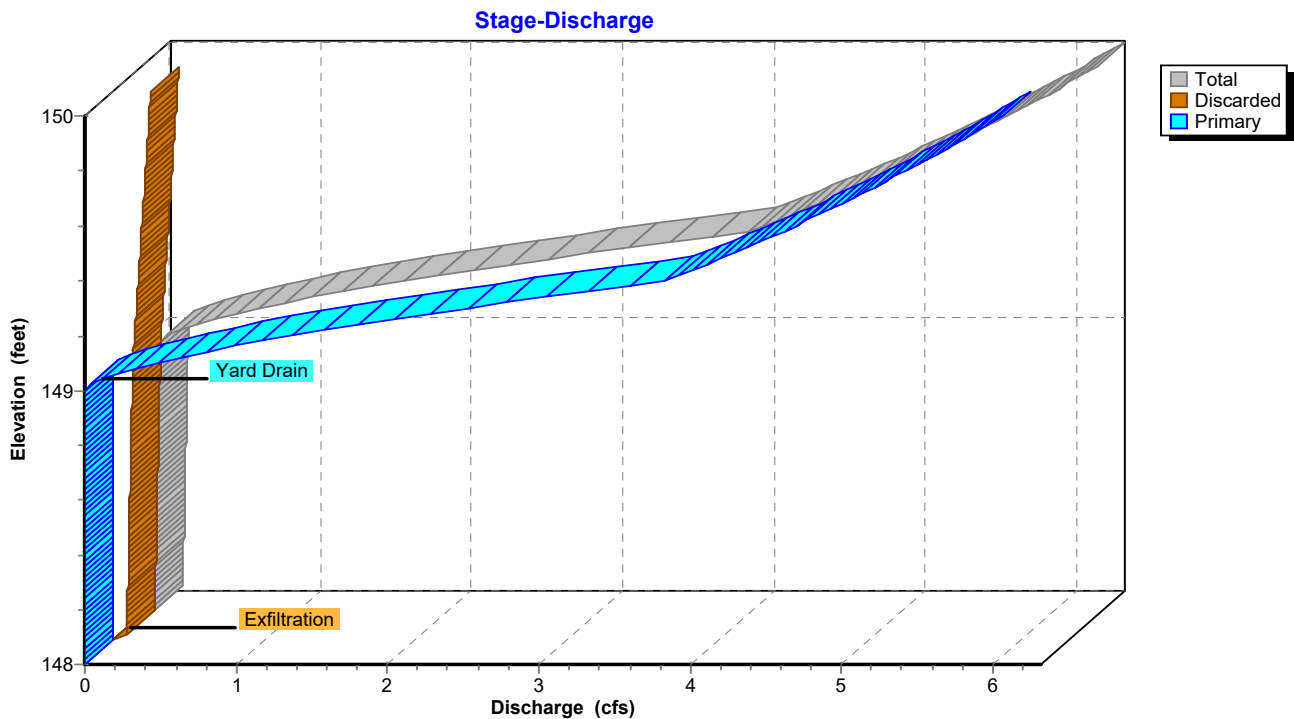
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Pond AP-2: Front Lawn Rain Garden



Pond AP-2: Front Lawn Rain Garden

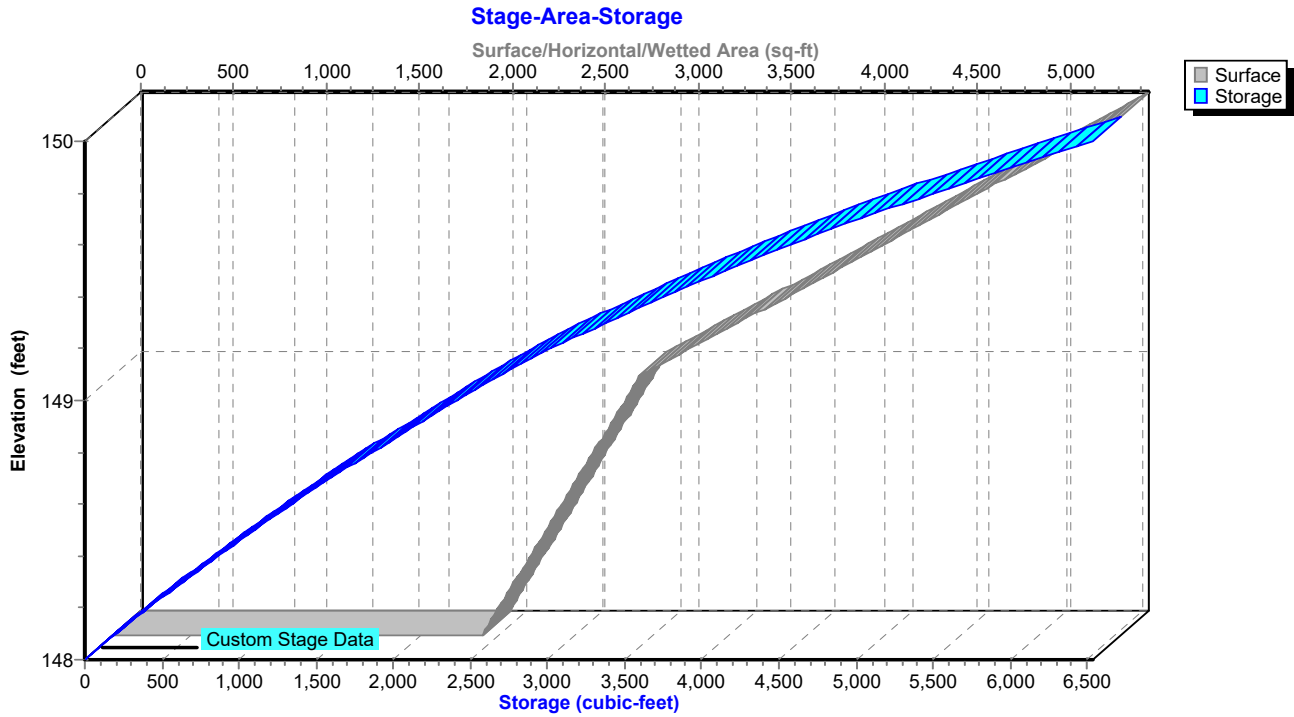


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Pond AP-2: Front Lawn Rain Garden



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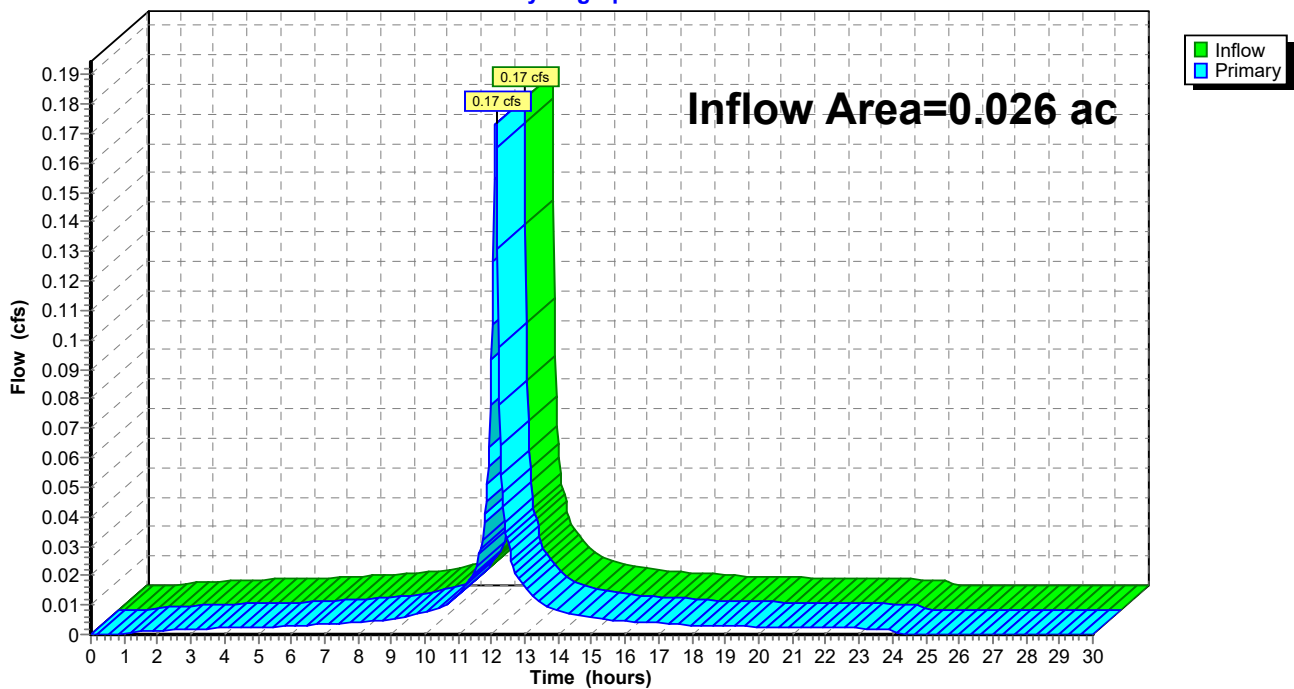
Summary for Pond AP-3: Danbury Road

Inflow Area = 0.026 ac, 100.00% Impervious, Inflow Depth = 6.32" for 25-yr event
Inflow = 0.17 cfs @ 12.13 hrs, Volume= 0.014 af
Primary = 0.17 cfs @ 12.13 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-3: Danbury Road

Hydrograph



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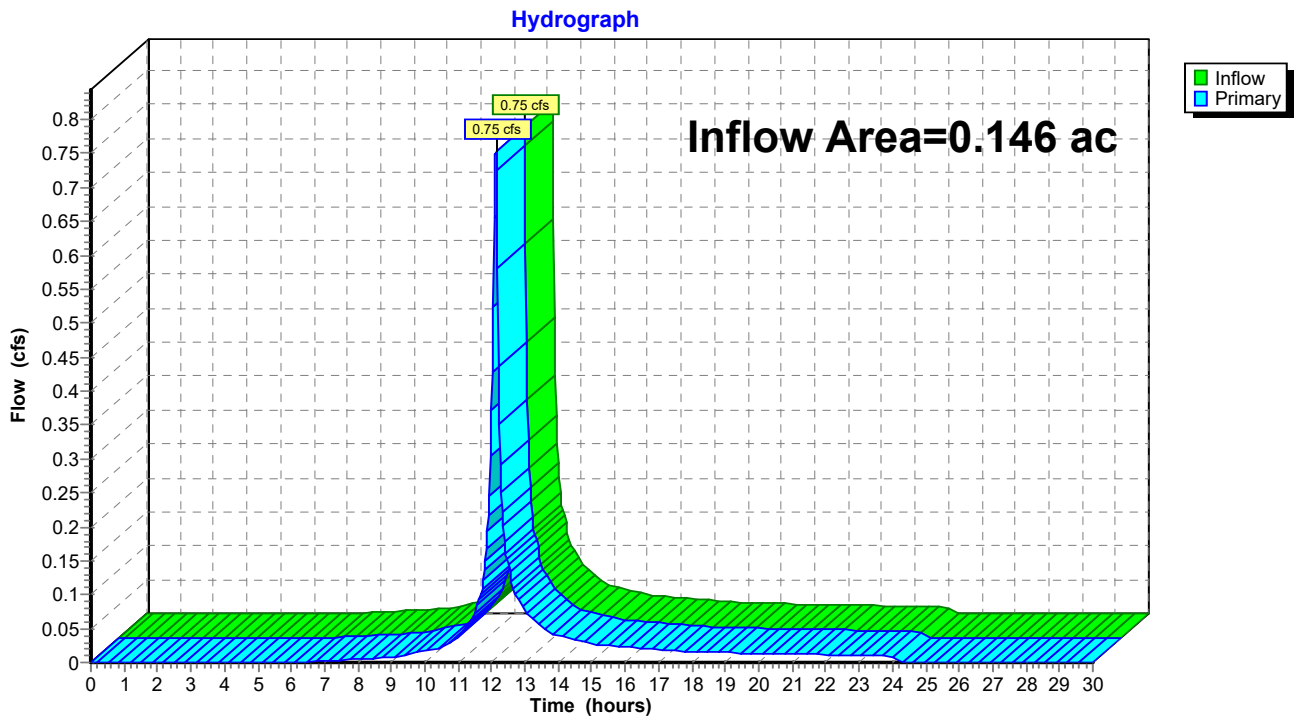
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Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.146 ac, 1.46% Impervious, Inflow Depth = 4.18" for 25-yr event
Inflow = 0.75 cfs @ 12.13 hrs, Volume= 0.051 af
Primary = 0.75 cfs @ 12.13 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Summary for Pond B-1: South Basin

Inflow Area = 0.116 ac, 17.66% Impervious, Inflow Depth = 4.61" for 25-yr event
Inflow = 0.65 cfs @ 12.13 hrs, Volume= 0.044 af
Outflow = 0.63 cfs @ 12.15 hrs, Volume= 0.044 af, Atten= 3%, Lag= 1.1 min
Discarded = 0.03 cfs @ 12.15 hrs, Volume= 0.028 af
Primary = 0.60 cfs @ 12.15 hrs, Volume= 0.017 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 140.02' @ 12.15 hrs Surf.Area= 545 sf Storage= 392 cf

Plug-Flow detention time= 102.1 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 102.1 min (912.0 - 809.9)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,118 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	228	0	0
140.00	539	384	384
141.00	929	734	1,118

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	139.90'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.15 hrs HW=140.01' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.60 cfs @ 12.15 hrs HW=140.01' (Free Discharge)
↑**1=Culvert** (Passes 0.60 cfs of 2.03 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.60 cfs @ 1.11 fps)

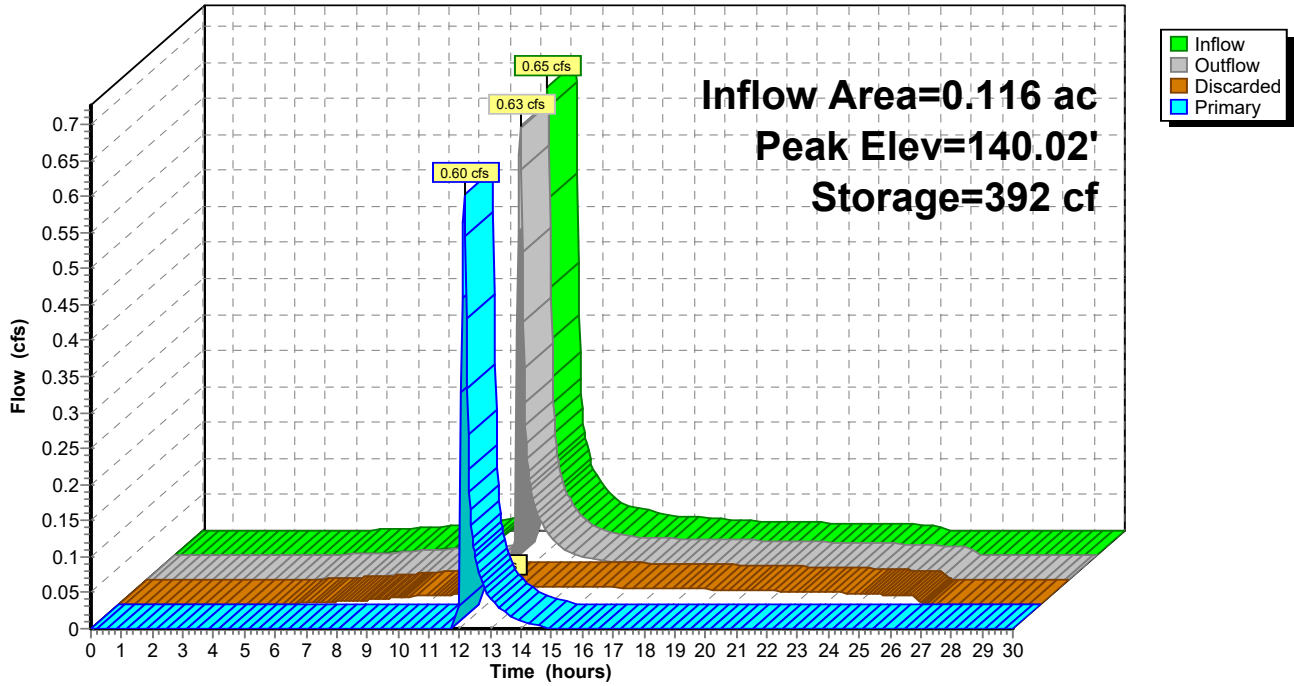
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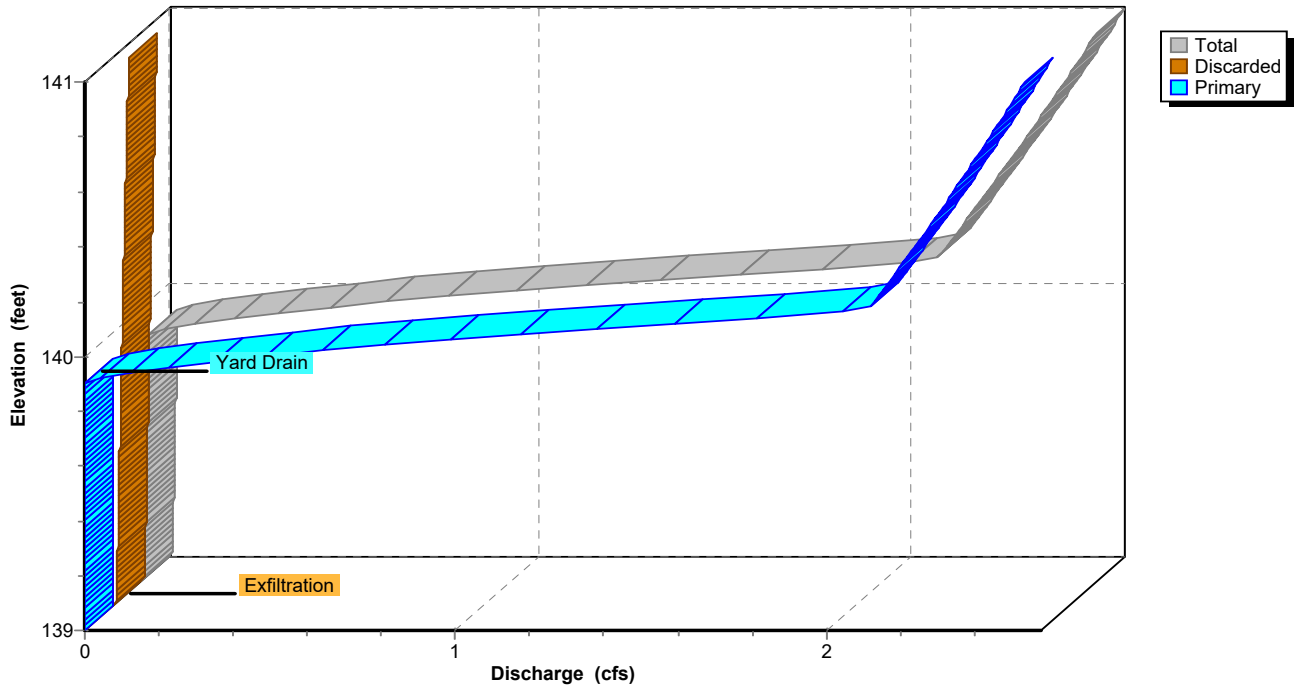
Pond B-1: South Basin

Hydrograph



Pond B-1: South Basin

Stage-Discharge



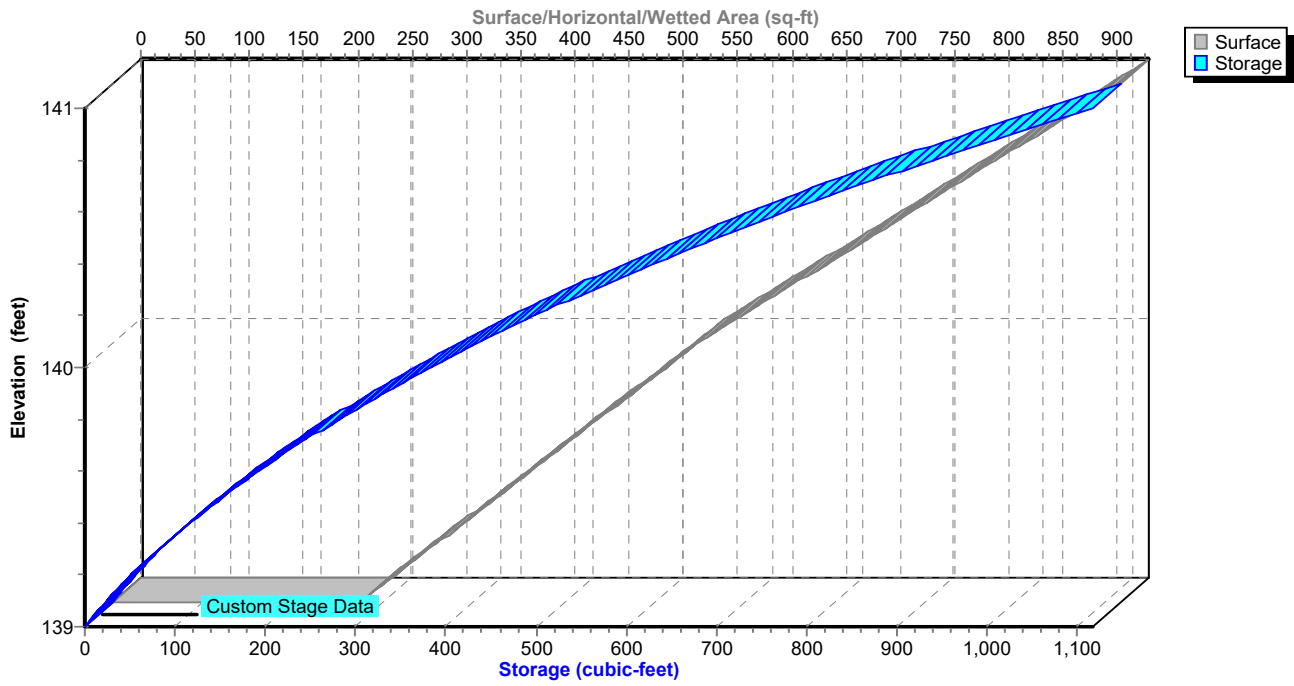
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Pond B-1: South Basin

Stage-Area-Storage



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Summary for Pond B-2: North Basin

Inflow Area = 0.154 ac, 7.18% Impervious, Inflow Depth = 4.72" for 25-yr event
Inflow = 0.88 cfs @ 12.13 hrs, Volume= 0.061 af
Outflow = 0.70 cfs @ 12.18 hrs, Volume= 0.061 af, Atten= 20%, Lag= 3.2 min
Discarded = 0.04 cfs @ 12.18 hrs, Volume= 0.044 af
Primary = 0.66 cfs @ 12.18 hrs, Volume= 0.017 af
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.92' @ 12.18 hrs Surf.Area= 904 sf Storage= 688 cf

Plug-Flow detention time= 106.4 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 106.3 min (913.2 - 806.9)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	589	0	0
140.00	930	760	760
141.00	1,327	1,129	1,888

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	10.0" Round Culvert L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	139.80'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.18 hrs HW=139.92' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

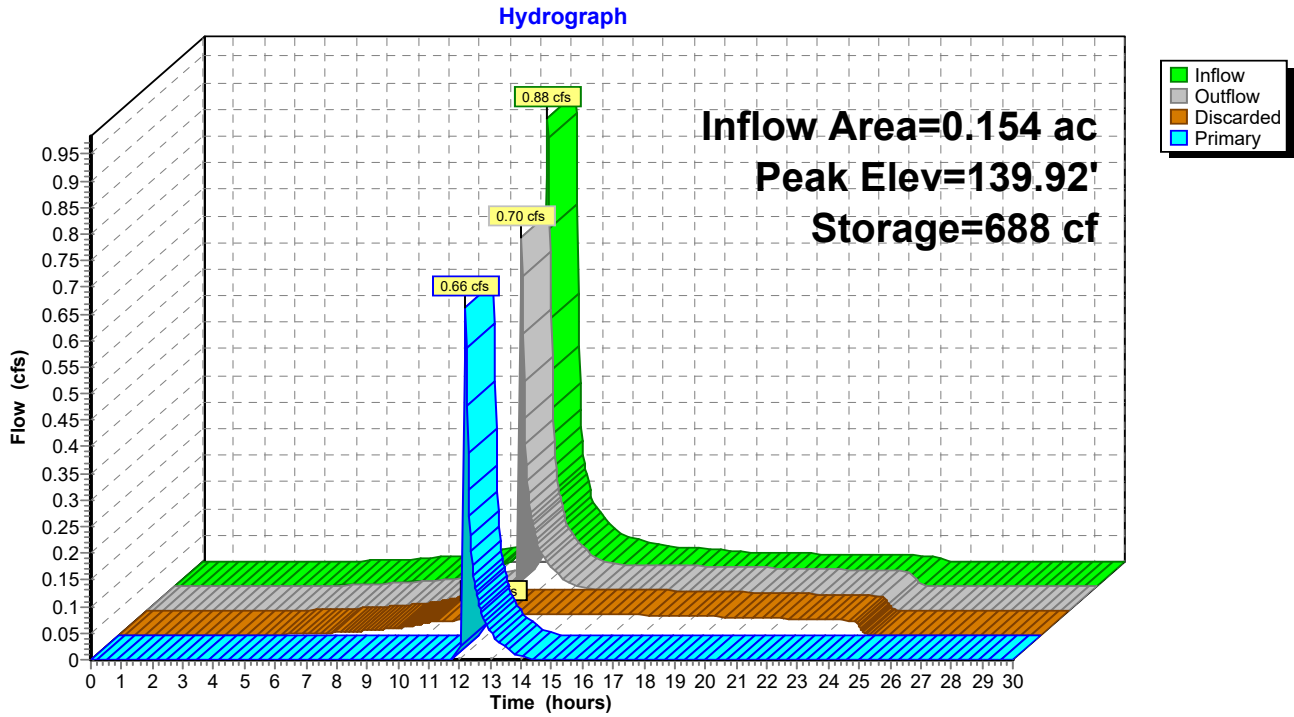
Primary OutFlow Max=0.65 cfs @ 12.18 hrs HW=139.92' (Free Discharge)
↑**1=Culvert** (Passes 0.65 cfs of 2.19 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.65 cfs @ 1.14 fps)

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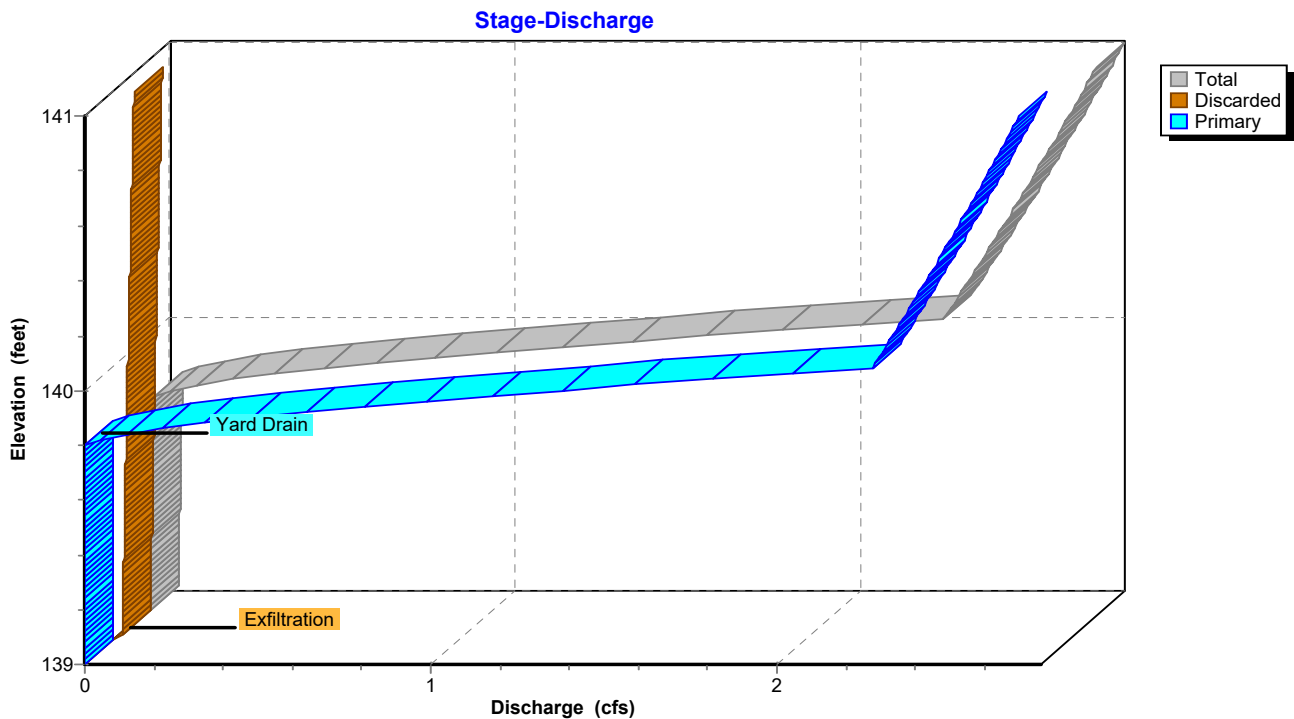
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Pond B-2: North Basin



Pond B-2: North Basin

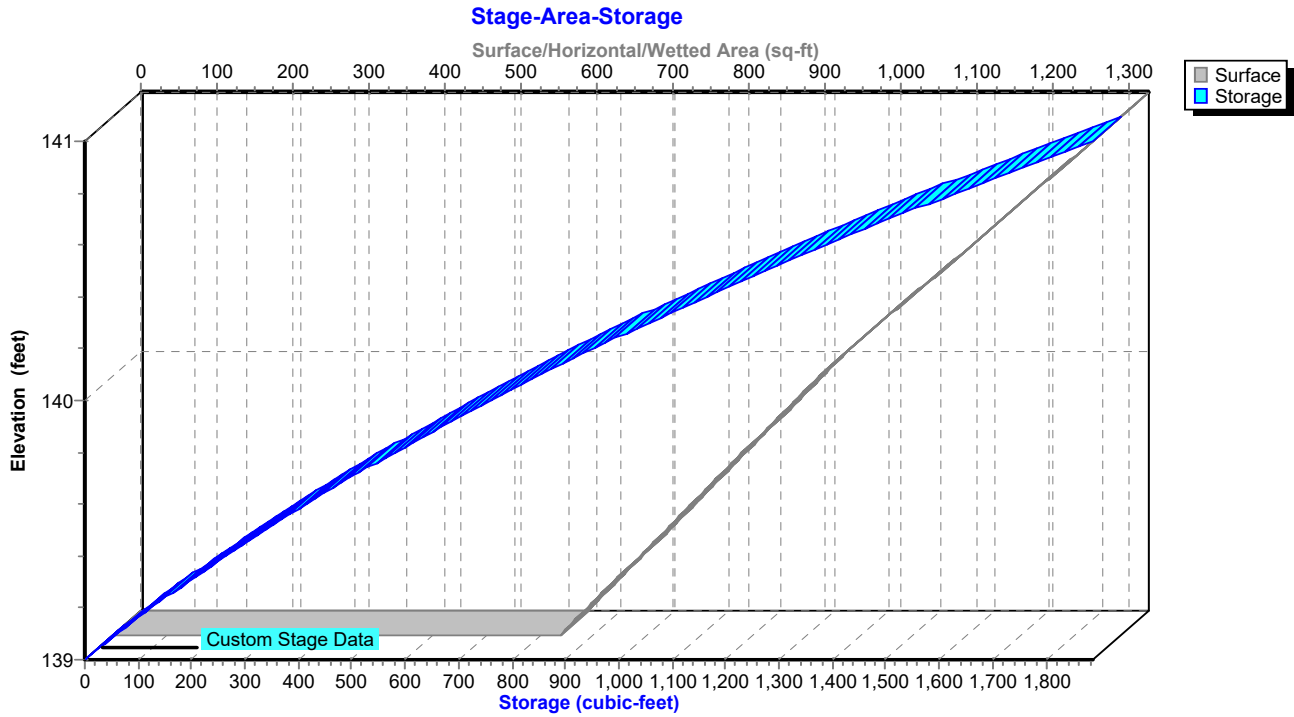


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Pond B-2: North Basin



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Summary for Pond S-1: Subsurface Infiltration System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 2.13" for 25-yr event
Inflow = 1.11 cfs @ 12.13 hrs, Volume= 0.115 af
Outflow = 0.54 cfs @ 12.61 hrs, Volume= 0.115 af, Atten= 51%, Lag= 28.7 min
Discarded = 0.06 cfs @ 10.74 hrs, Volume= 0.077 af
Primary = 0.48 cfs @ 12.61 hrs, Volume= 0.038 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 145.13' @ 12.61 hrs Surf.Area= 0.029 ac Storage= 0.039 af

Plug-Flow detention time= 128.5 min calculated for 0.115 af (100% of inflow)
Center-of-Mass det. time= 128.4 min (896.6 - 768.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.10'	0.026 af	20.50'W x 60.58'L x 3.50'H Field A 0.100 af Overall - 0.034 af Embedded = 0.066 af x 40.0% Voids
#2A	143.60'	0.034 af	ADS_StormTech SC-740 +Cap x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	144.35'	15.0" Round Culvert L= 119.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.35' / 142.85' S= 0.0126 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	144.63'	4.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	146.00'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	143.10'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 10.74 hrs HW=143.14' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.48 cfs @ 12.61 hrs HW=145.12' (Free Discharge)
↑**1=Culvert** (Passes 0.48 cfs of 2.39 cfs potential flow)
↑**2=Orifice** (Orifice Controls 0.48 cfs @ 2.76 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-1: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af

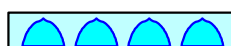
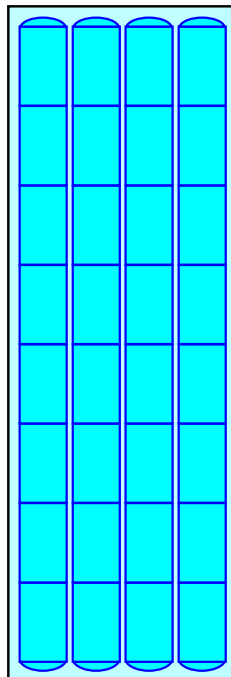
Overall Storage Efficiency = 60.3%

Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers

161.0 cy Field

106.5 cy Stone

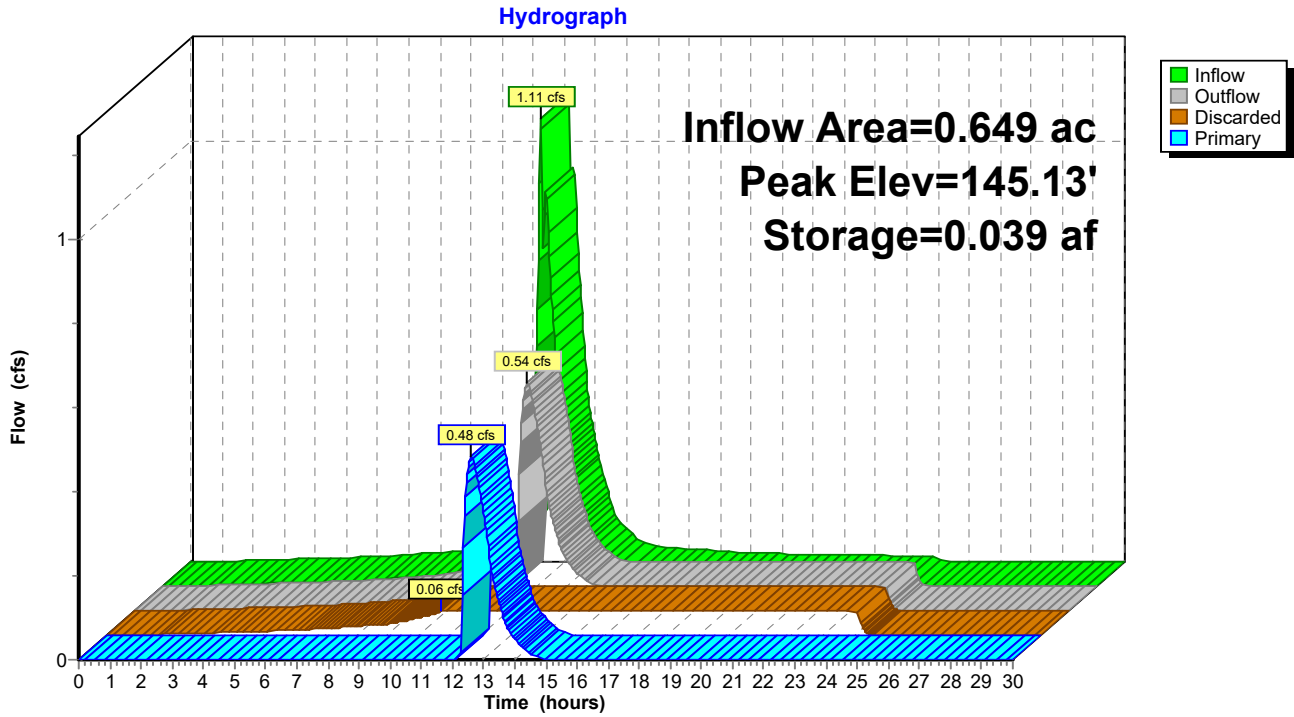


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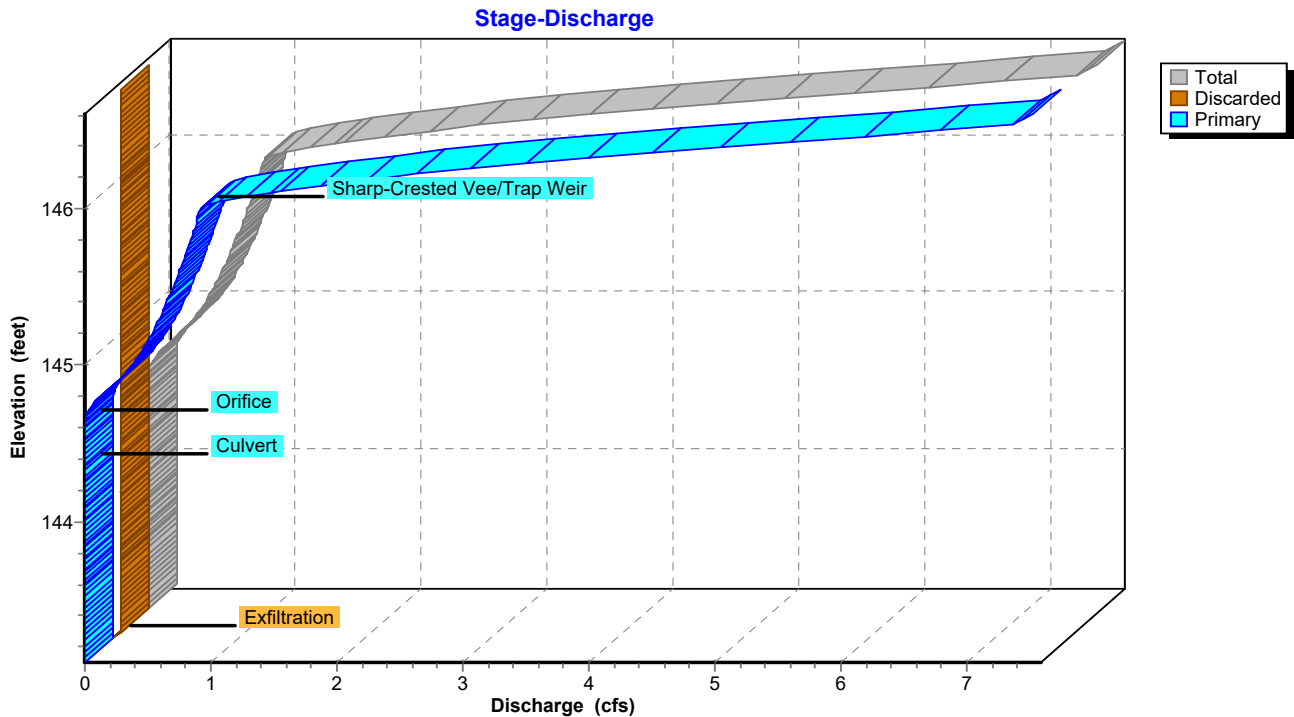
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Pond S-1: Subsurface Infiltration System



Pond S-1: Subsurface Infiltration System

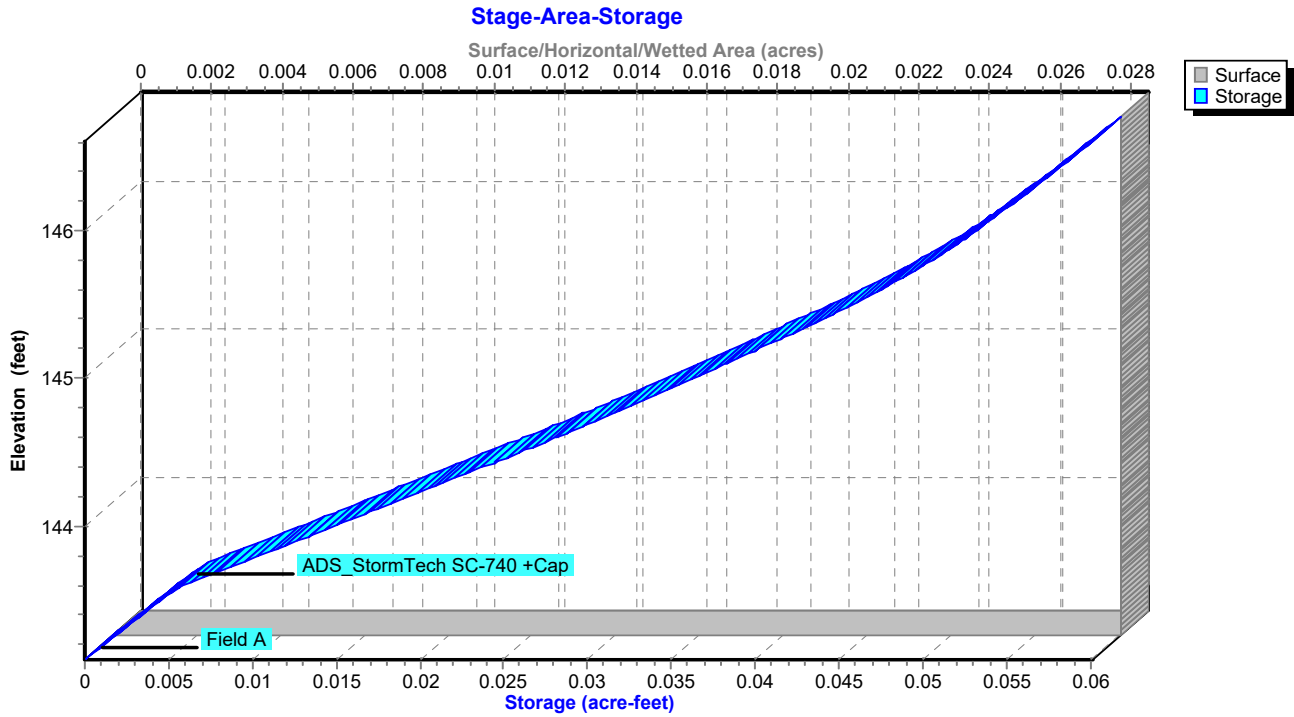


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Pond S-1: Subsurface Infiltration System



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Summary for Pond S-2: Subsurface Infiltration System

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 6.32" for 25-yr event
Inflow = 1.40 cfs @ 11.39 hrs, Volume= 0.968 af
Outflow = 1.31 cfs @ 16.95 hrs, Volume= 0.958 af, Atten= 7%, Lag= 333.3 min
Discarded = 0.12 cfs @ 2.85 hrs, Volume= 0.284 af
Primary = 1.19 cfs @ 16.95 hrs, Volume= 0.674 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 144.17' @ 16.95 hrs Surf.Area= 0.060 ac Storage= 0.107 af

Plug-Flow detention time= 97.5 min calculated for 0.958 af (99% of inflow)
Center-of-Mass det. time= 91.1 min (889.0 - 797.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	141.50'	0.054 af	25.25"W x 103.30"L x 3.50"H Field A 0.210 af Overall - 0.074 af Embedded = 0.136 af x 40.0% Voids
#2A	142.00'	0.074 af	ADS_StormTech SC-740 +Cap x 70 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 70 Chambers in 5 Rows
		0.128 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.04'	12.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.04' / 142.29' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	143.14'	5.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	144.40'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	141.50'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 2.85 hrs HW=141.54' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=1.19 cfs @ 16.95 hrs HW=144.17' (Free Discharge)
↑**1=Culvert** (Passes 1.19 cfs of 3.00 cfs potential flow)
↑**2=Orifice** (Orifice Controls 1.19 cfs @ 4.36 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-2: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

14 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 101.30' Row Length +12.0" End Stone x 2 = 103.30' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

70 Chambers x 45.9 cf = 3,215.8 cf Chamber Storage

9,128.8 cf Field - 3,215.8 cf Chambers = 5,913.0 cf Stone x 40.0% Voids = 2,365.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,581.0 cf = 0.128 af

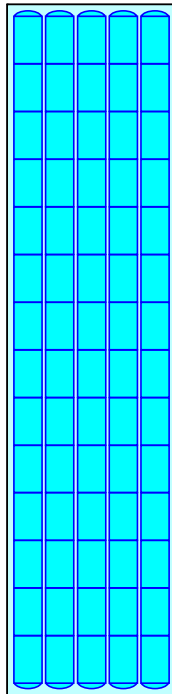
Overall Storage Efficiency = 61.1%

Overall System Size = 103.30' x 25.25' x 3.50'

70 Chambers

338.1 cy Field

219.0 cy Stone

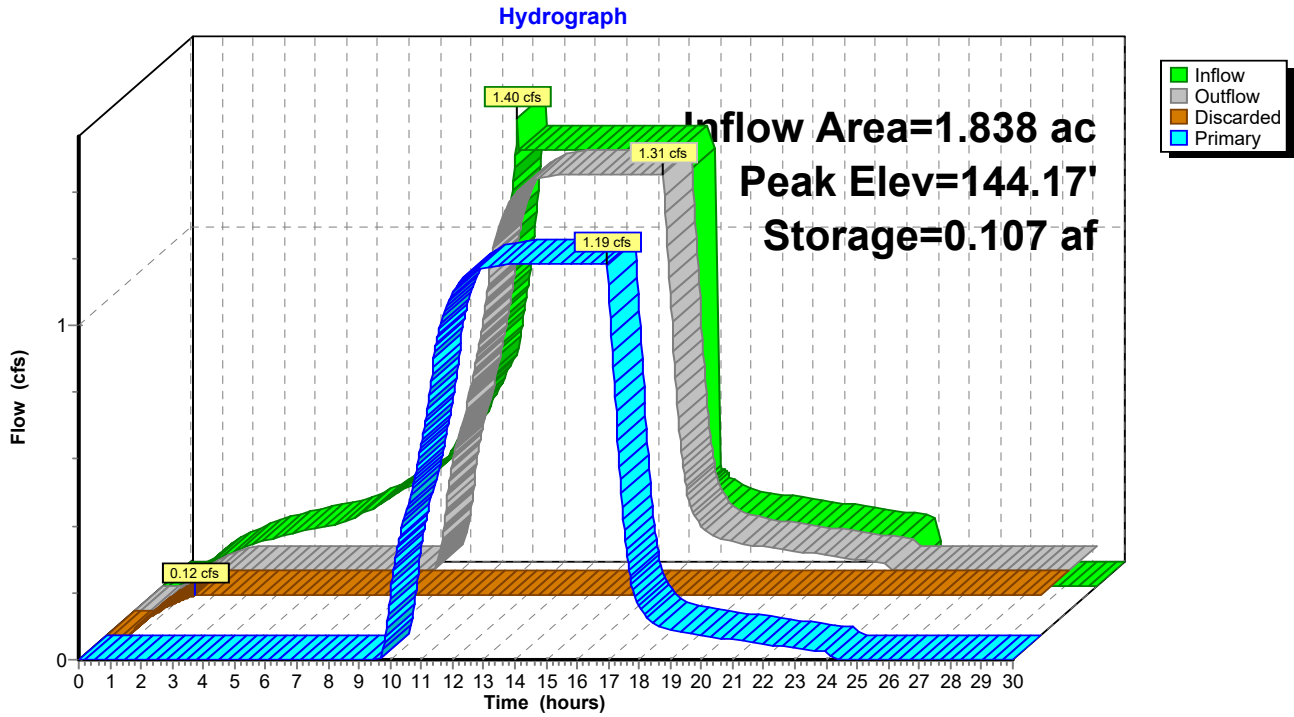


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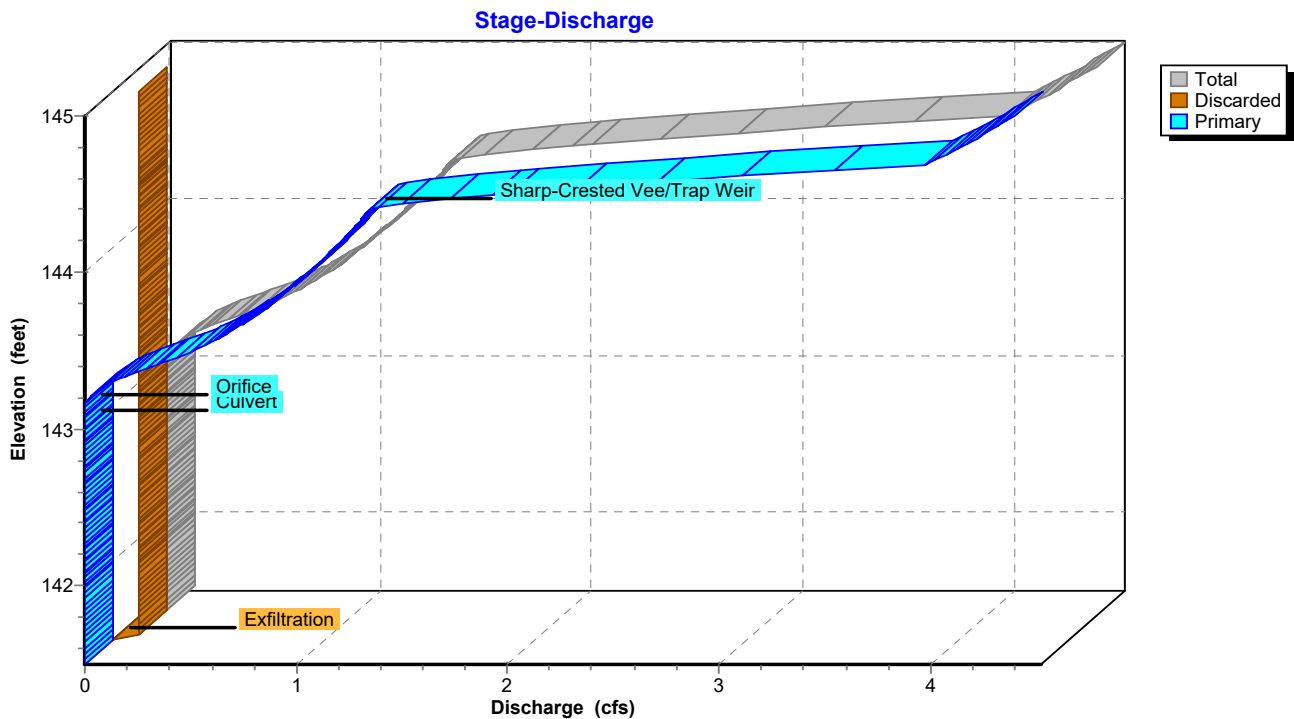
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Pond S-2: Subsurface Infiltration System



Pond S-2: Subsurface Infiltration System

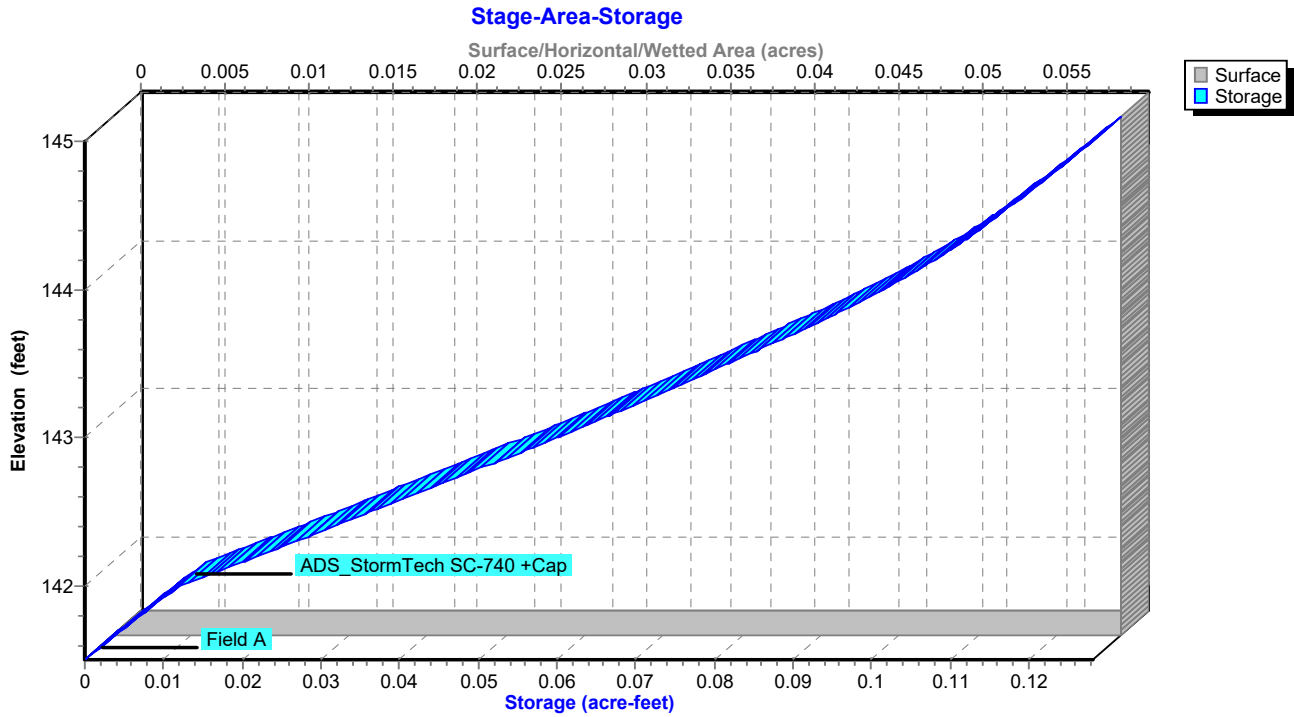


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Pond S-2: Subsurface Infiltration System



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Summary for Pond S-3: Subsurface Infiltration System

Inflow Area = 1.375 ac, 64.06% Impervious, Inflow Depth = 5.17" for 25-yr event
Inflow = 5.61 cfs @ 12.18 hrs, Volume= 0.593 af
Outflow = 4.36 cfs @ 12.33 hrs, Volume= 0.593 af, Atten= 22%, Lag= 9.1 min
Discarded = 0.16 cfs @ 8.49 hrs, Volume= 0.271 af
Primary = 4.20 cfs @ 12.33 hrs, Volume= 0.322 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.40' @ 12.33 hrs Surf.Area= 0.081 ac Storage= 0.132 af

Plug-Flow detention time= 69.9 min calculated for 0.592 af (100% of inflow)
Center-of-Mass det. time= 69.9 min (843.6 - 773.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	137.00'	0.073 af	25.25"W x 138.90"L x 3.50"H Field A 0.282 af Overall - 0.100 af Embedded = 0.182 af x 40.0% Voids
#2A	137.50'	0.100 af	ADS_StormTech SC-740 +Cap x 95 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 95 Chambers in 5 Rows
		0.173 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	137.90'	18.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 137.90' / 137.53' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	137.92'	7.0" Vert. Orifice X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	139.90'	5.0' long Weir Wall Cv= 2.62 (C= 3.28)
#4	Discarded	137.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 8.49 hrs HW=137.04' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=4.19 cfs @ 12.33 hrs HW=139.39' (Free Discharge)
↑**1=Culvert** (Passes 4.19 cfs of 6.30 cfs potential flow)
↑**2=Orifice** (Orifice Controls 4.19 cfs @ 5.23 fps)
↑**3=Weir Wall** (Controls 0.00 cfs)

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Pond S-3: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

19 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 136.90' Row Length +12.0" End Stone x 2 =
138.90' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

95 Chambers x 45.9 cf = 4,364.3 cf Chamber Storage

12,275.0 cf Field - 4,364.3 cf Chambers = 7,910.7 cf Stone x 40.0% Voids = 3,164.3 cf Stone Storage

Chamber Storage + Stone Storage = 7,528.6 cf = 0.173 af

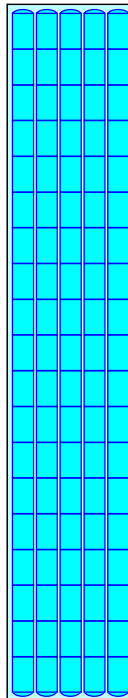
Overall Storage Efficiency = 61.3%

Overall System Size = 138.90' x 25.25' x 3.50'

95 Chambers

454.6 cy Field

293.0 cy Stone

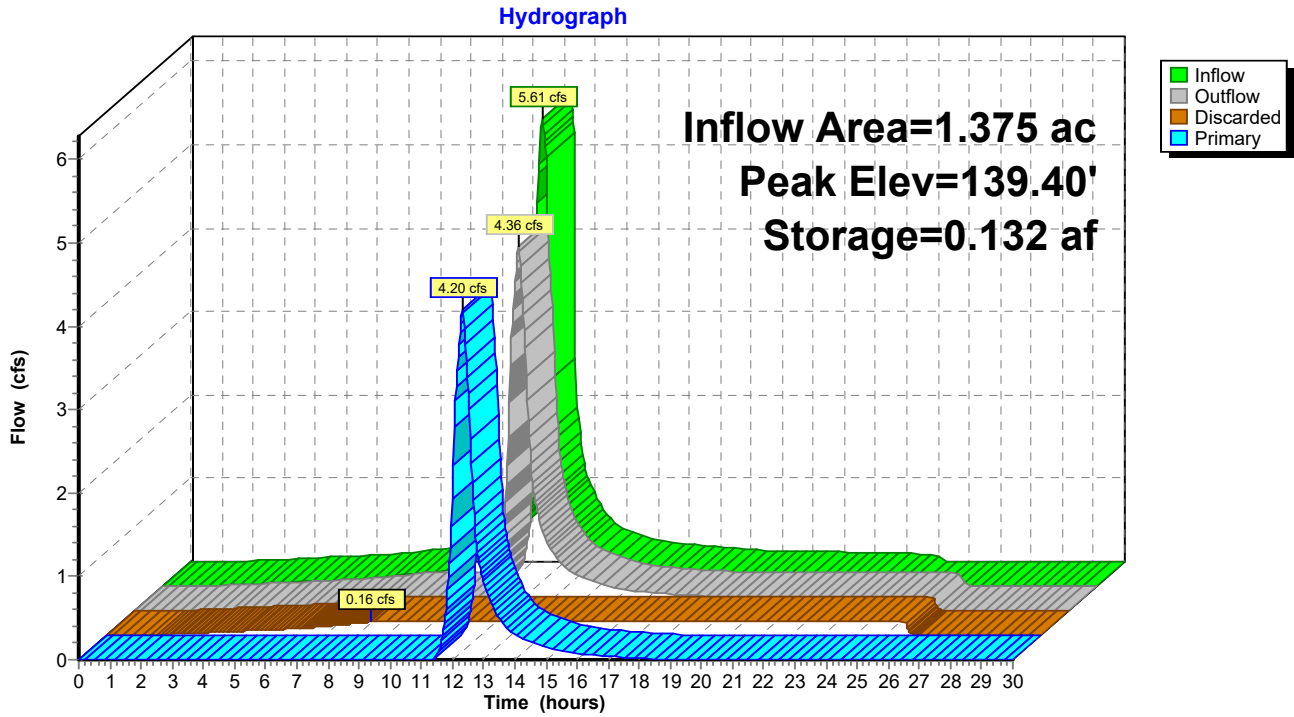


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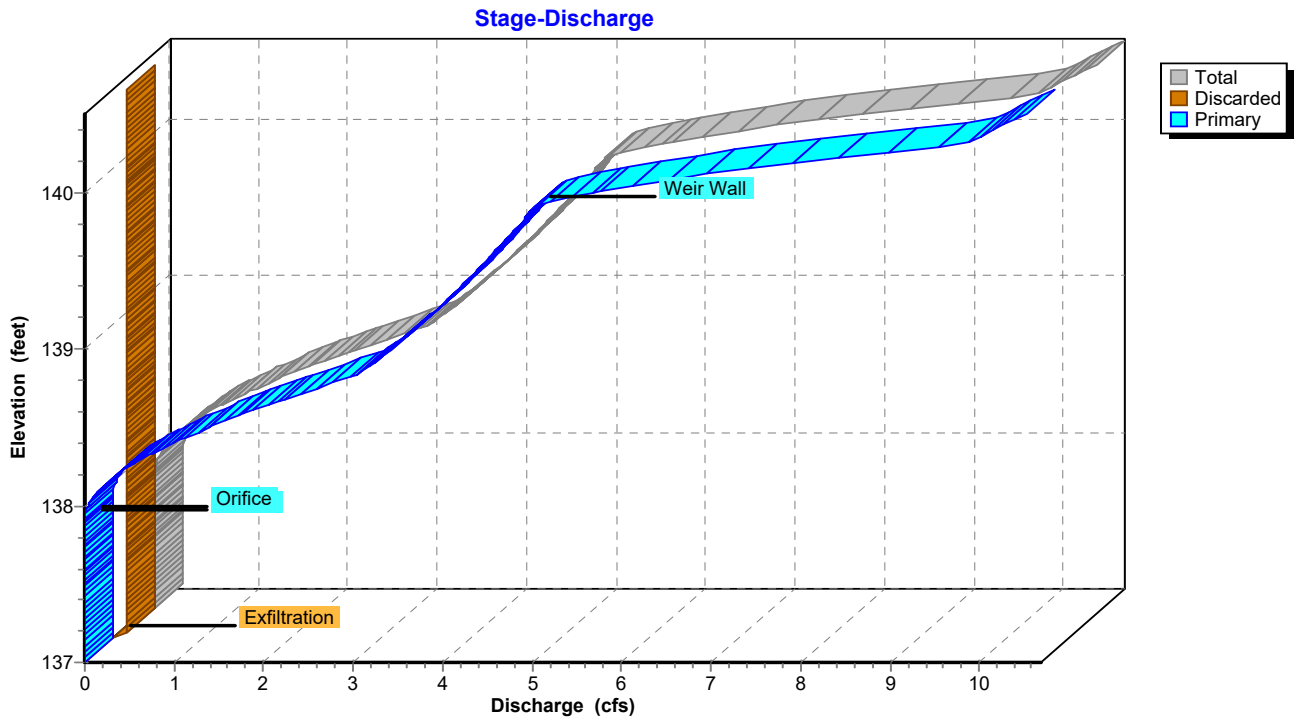
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Pond S-3: Subsurface Infiltration System



Pond S-3: Subsurface Infiltration System

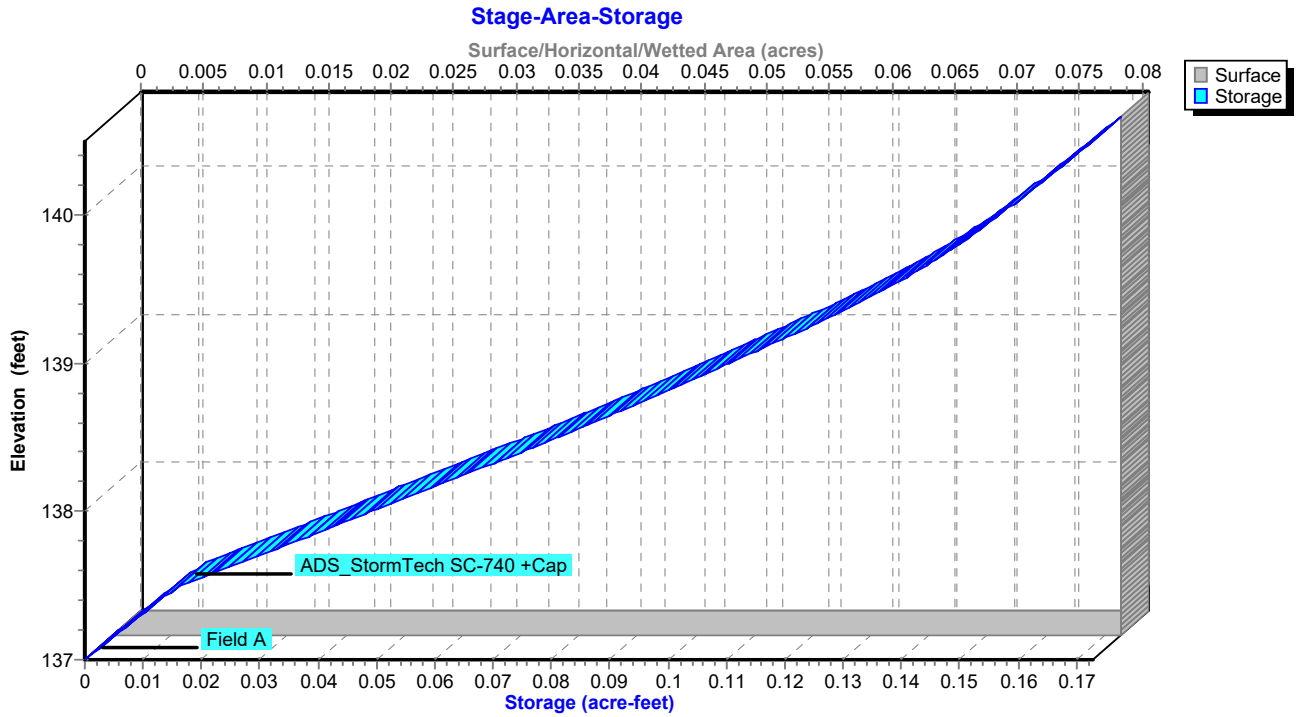


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Pond S-3: Subsurface Infiltration System



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Summary for Subcatchment PR-1: CCB 14

Runoff = 0.37 cfs @ 12.13 hrs, Volume= 0.029 af, Depth= 7.06"
Routed to Reach R2 : Site Stormwater System

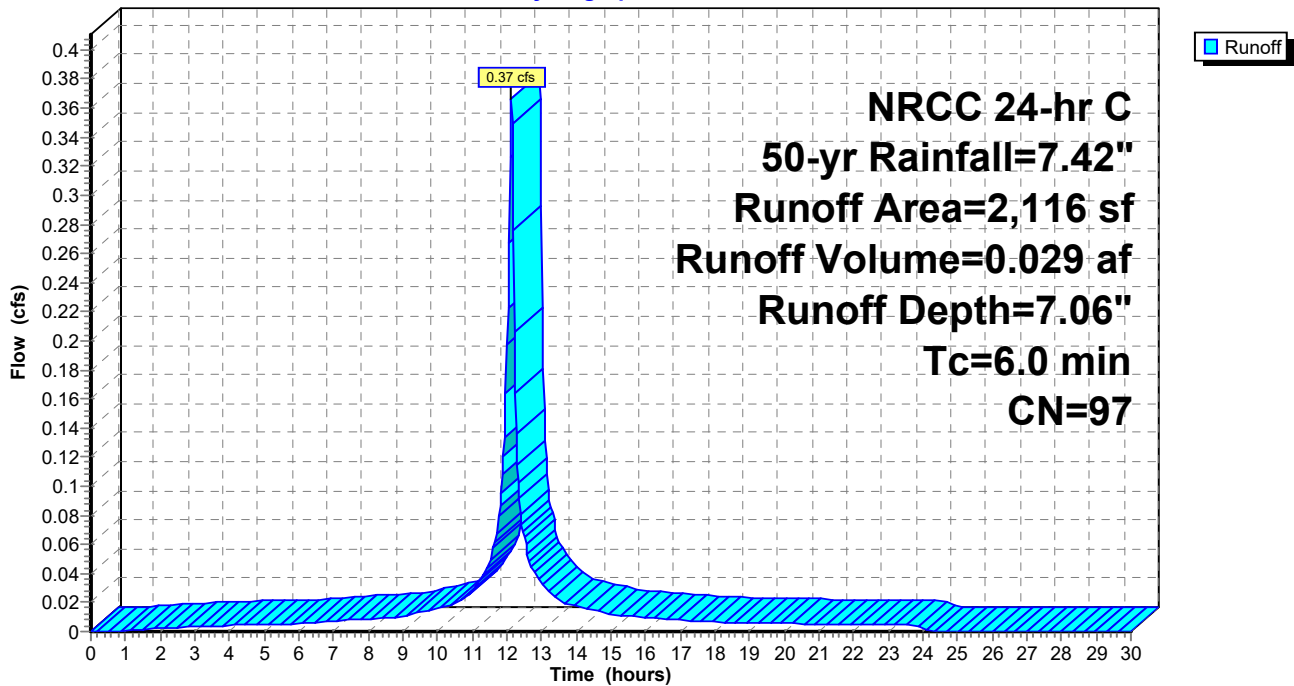
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
2,045	98	Paved parking, HSG D
* 71	79	Landscaping, Good, HSG D
2,116	97	Weighted Average
71		3.36% Pervious Area
2,045		96.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-1: CCB 14

Hydrograph



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Summary for Subcatchment PR-10: CCB 28

Runoff = 1.56 cfs @ 12.13 hrs, Volume= 0.118 af, Depth= 6.82"
Routed to Reach R2 : Site Stormwater System

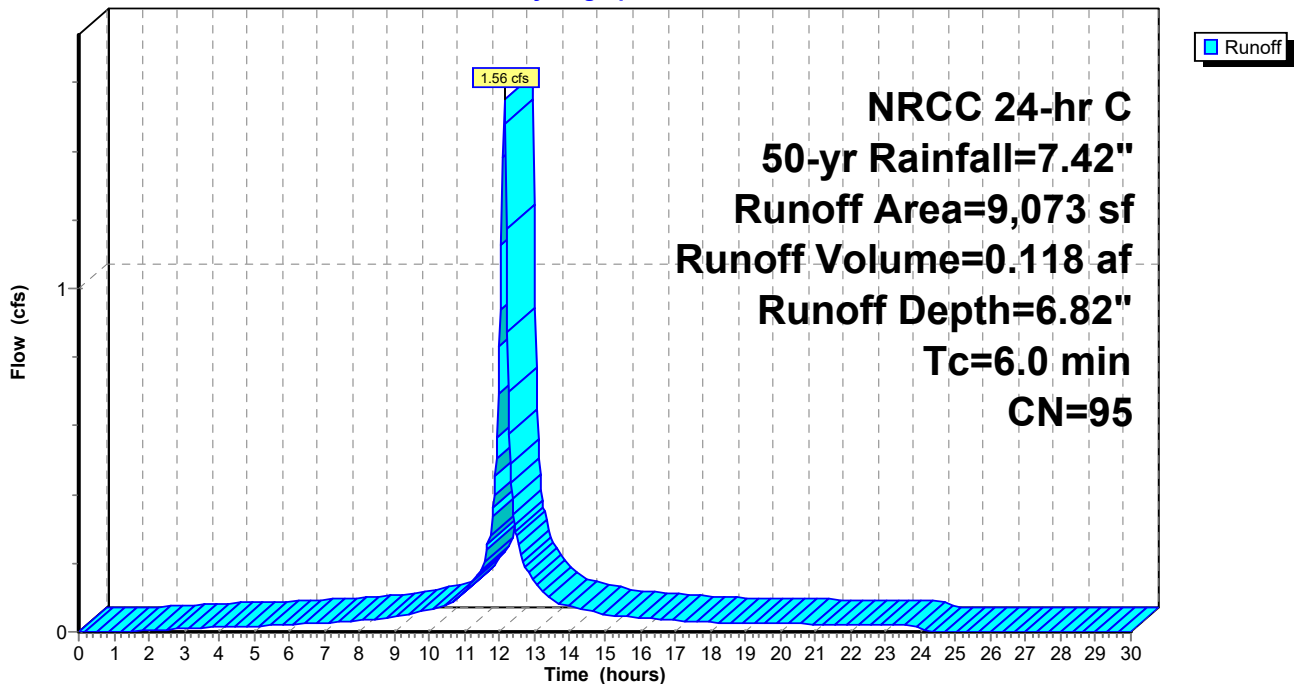
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
7,450	98	Paved parking, HSG D
440	80	>75% Grass cover, Good, HSG D
* 1,183	79	Landscaping, Good, HSG D
9,073	95	Weighted Average
1,623		17.89% Pervious Area
7,450		82.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-10: CCB 28

Hydrograph



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Summary for Subcatchment PR-11: Building Roof

Runoff = 13.91 cfs @ 12.13 hrs, Volume= 1.100 af, Depth= 7.18"
Routed to Reach R1 : Roof Leader

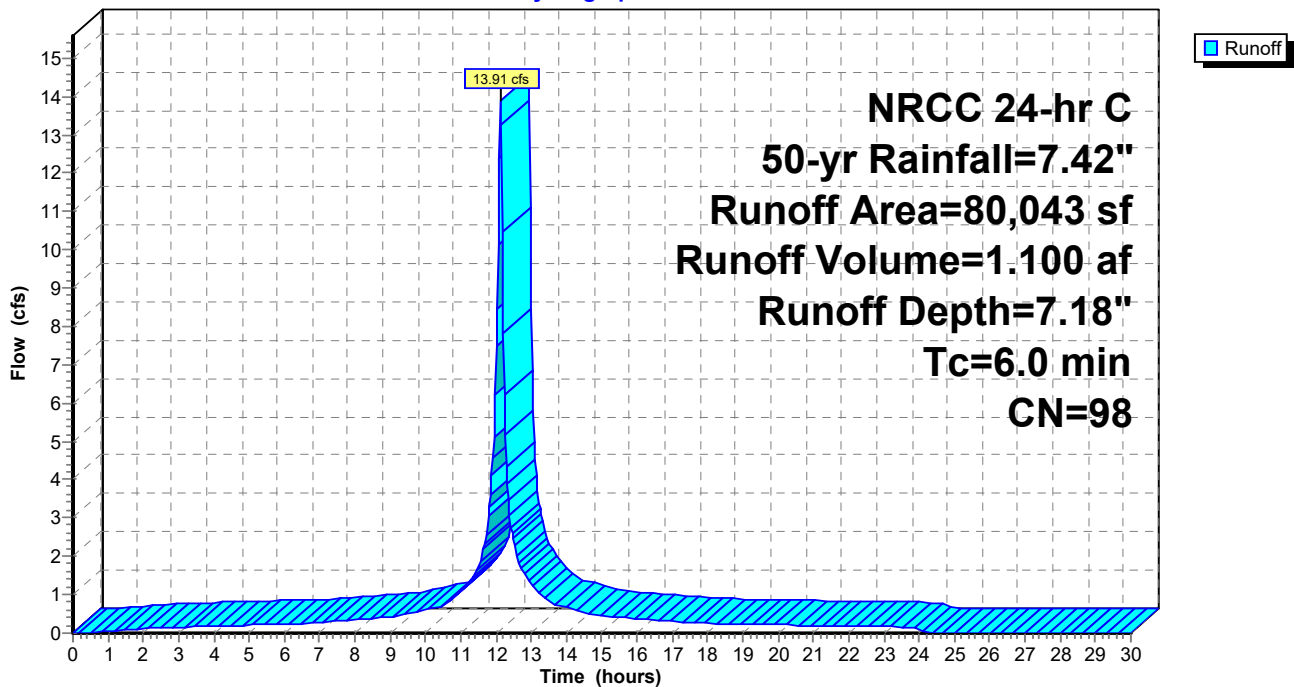
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
80,043	98	Roofs, HSG D
80,043		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-11: Building Roof

Hydrograph



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Summary for Subcatchment PR-12: CCB 29

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 7.18"
Routed to Reach R2 : Site Stormwater System

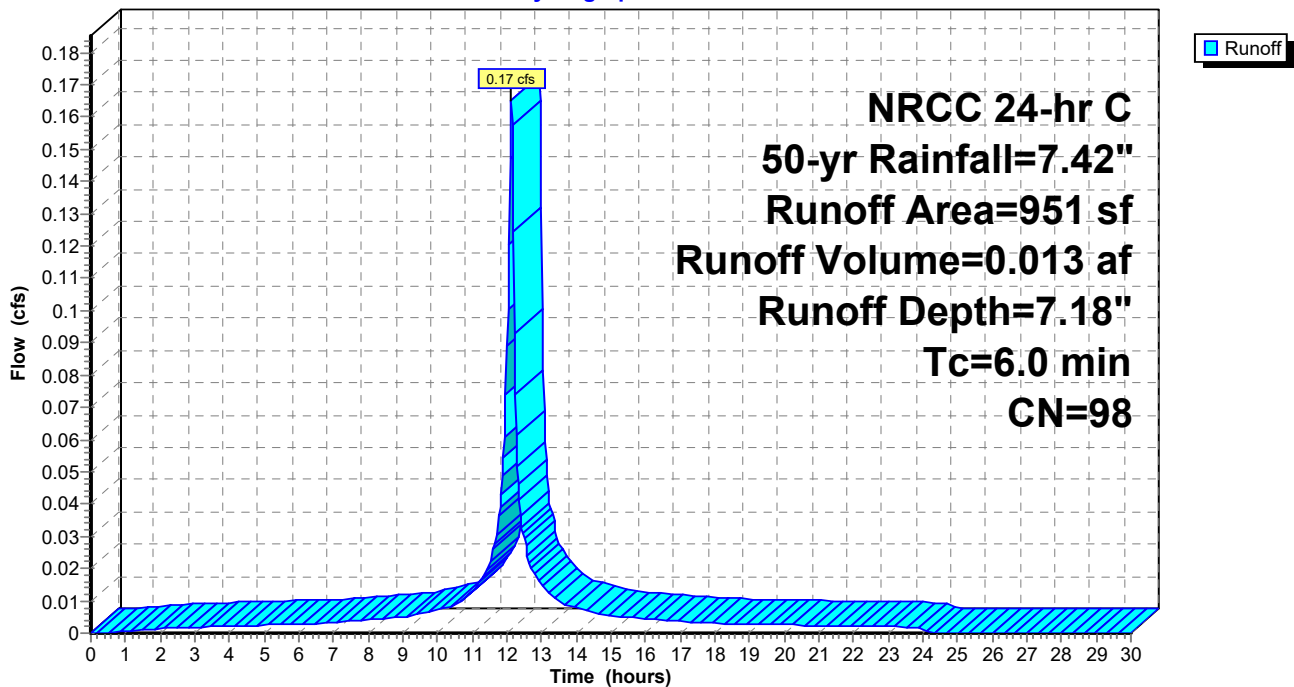
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
951	98	Paved parking, HSG D
951		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-12: CCB 29

Hydrograph



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Summary for Subcatchment PR-13: CCB 30

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.014 af, Depth= 7.18"
Routed to Reach R2 : Site Stormwater System

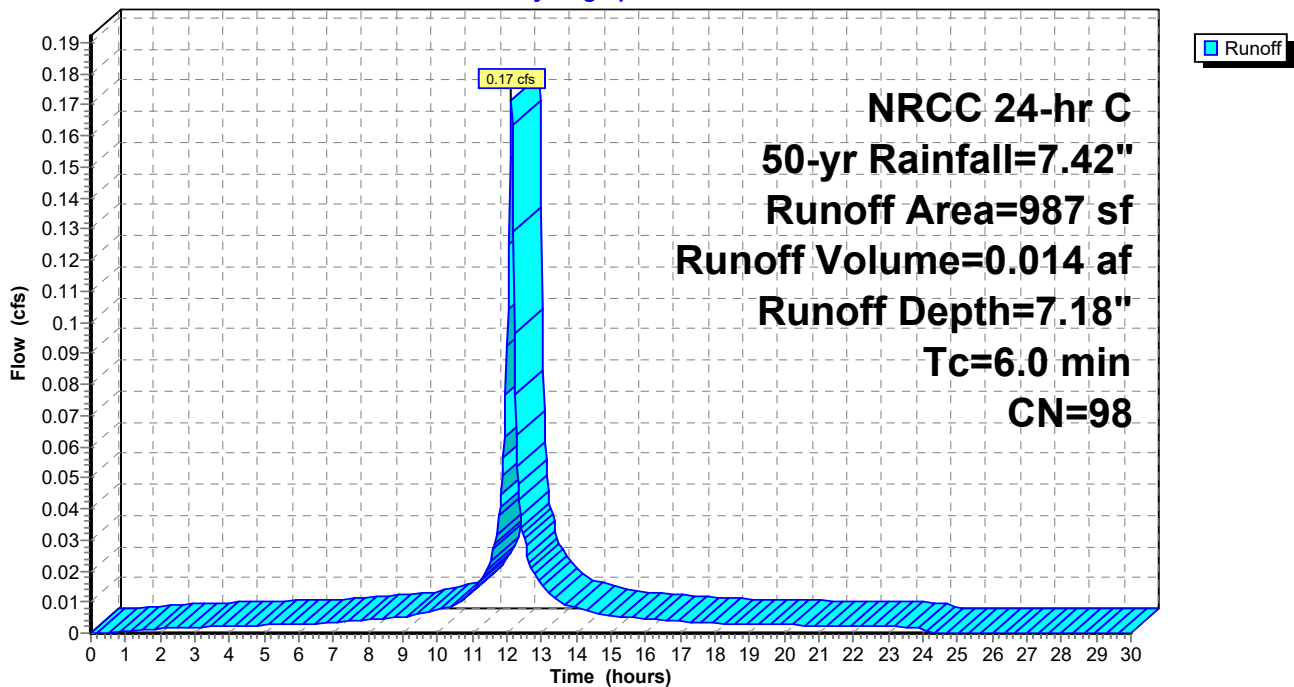
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
987	98	Paved parking, HSG D
987		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-13: CCB 30

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Summary for Subcatchment PR-14: CLCB-10

Runoff = 0.30 cfs @ 12.13 hrs, Volume= 0.023 af, Depth= 6.94"
Routed to Reach R3 : East Stormwater System

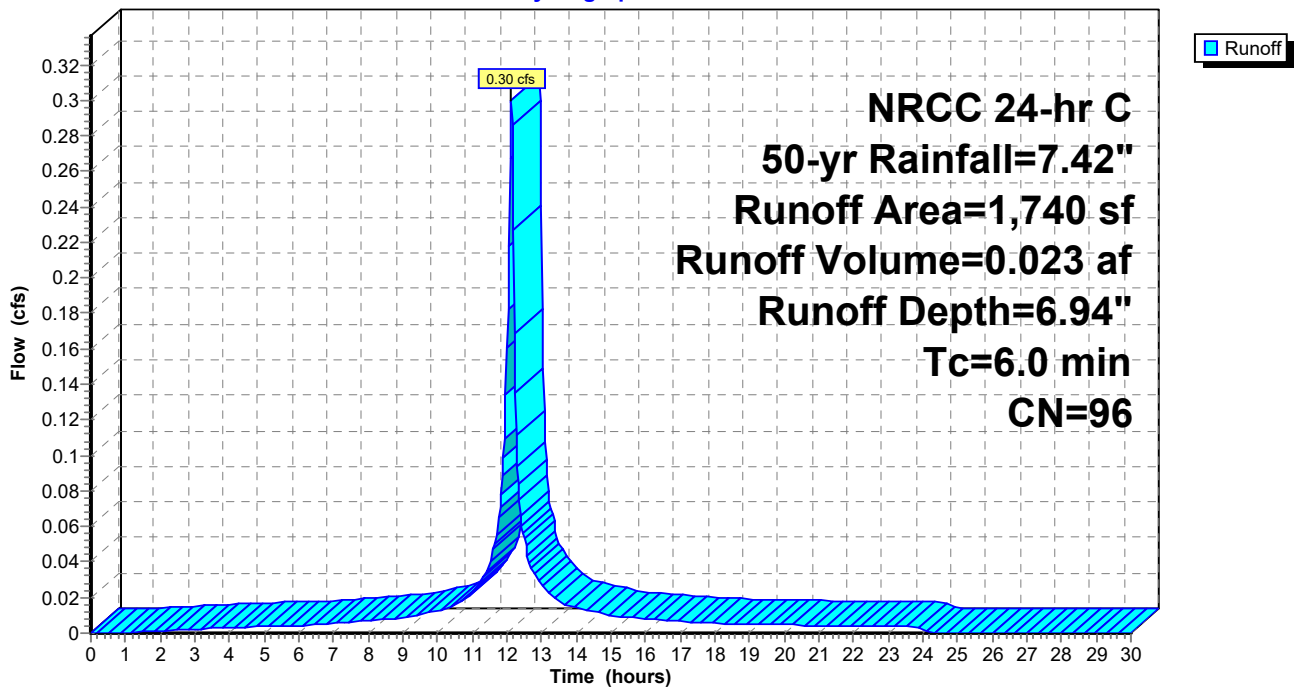
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
* 1,740	96	Concrete paver, HSG D
1,740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-14: CLCB-10

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Summary for Subcatchment PR-15: CLCB-09

Runoff = 0.30 cfs @ 12.13 hrs, Volume= 0.023 af, Depth= 6.94"
Routed to Reach R3 : East Stormwater System

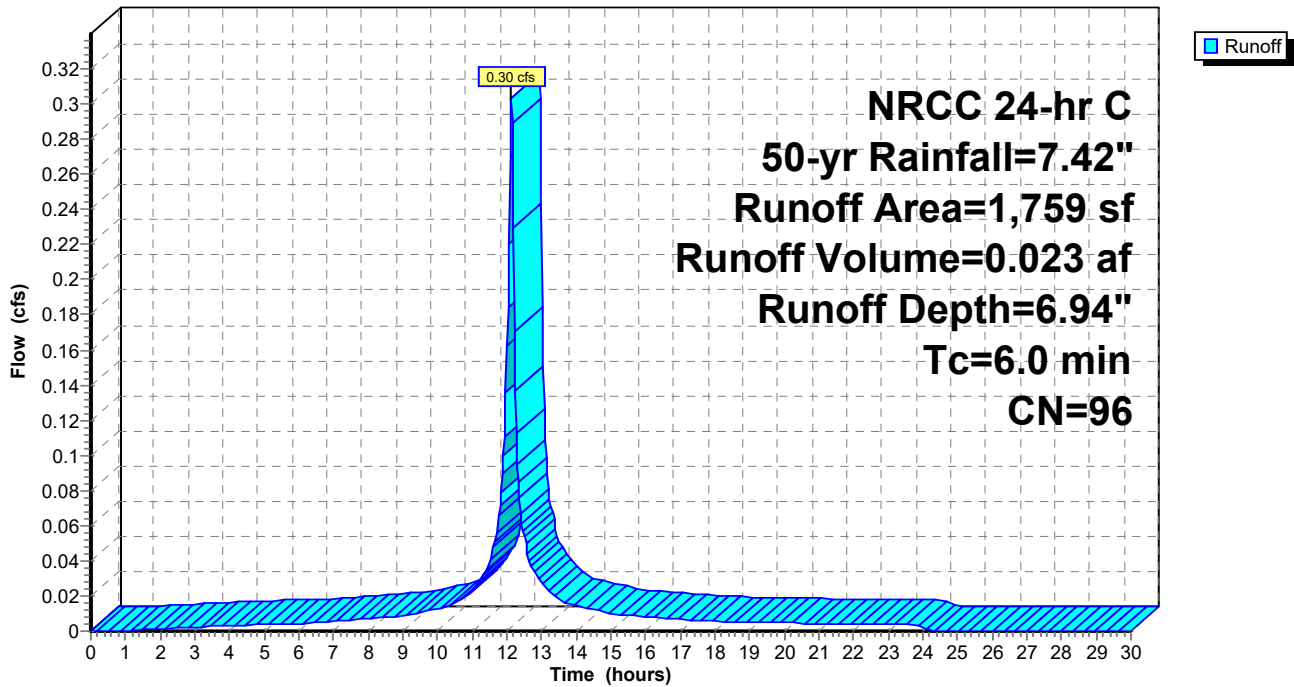
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
* 1,759	96	Pevious paver, HSG D
1,759		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-15: CLCB-09

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Summary for Subcatchment PR-16: East rooftop

Runoff = 0.56 cfs @ 12.13 hrs, Volume= 0.044 af, Depth= 7.18"
Routed to Pond AP-2 : Front Lawn Rain Garden

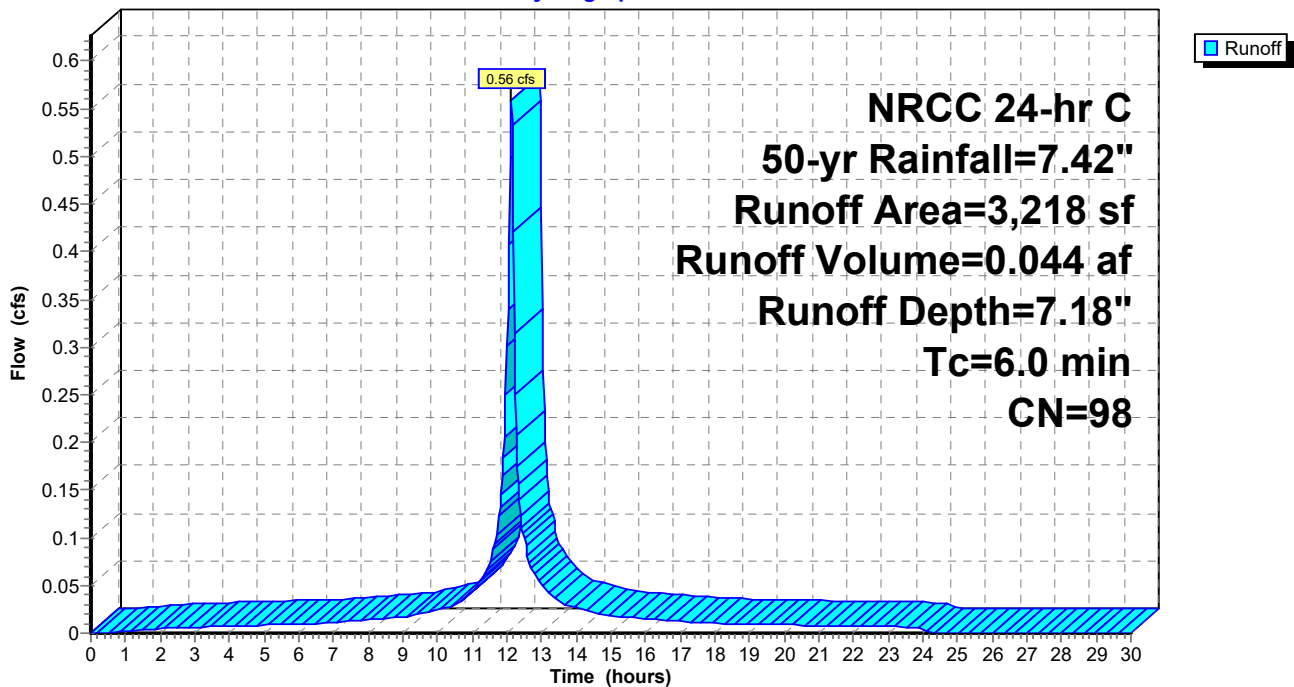
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
3,218	98	Roofs, HSG D
3,218		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-16: East rooftop

Hydrograph



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Summary for Subcatchment PR-17: Front Lawn

Runoff = 2.54 cfs @ 12.13 hrs, Volume= 0.174 af, Depth= 5.20"
 Routed to Pond AP-2 : Front Lawn Rain Garden

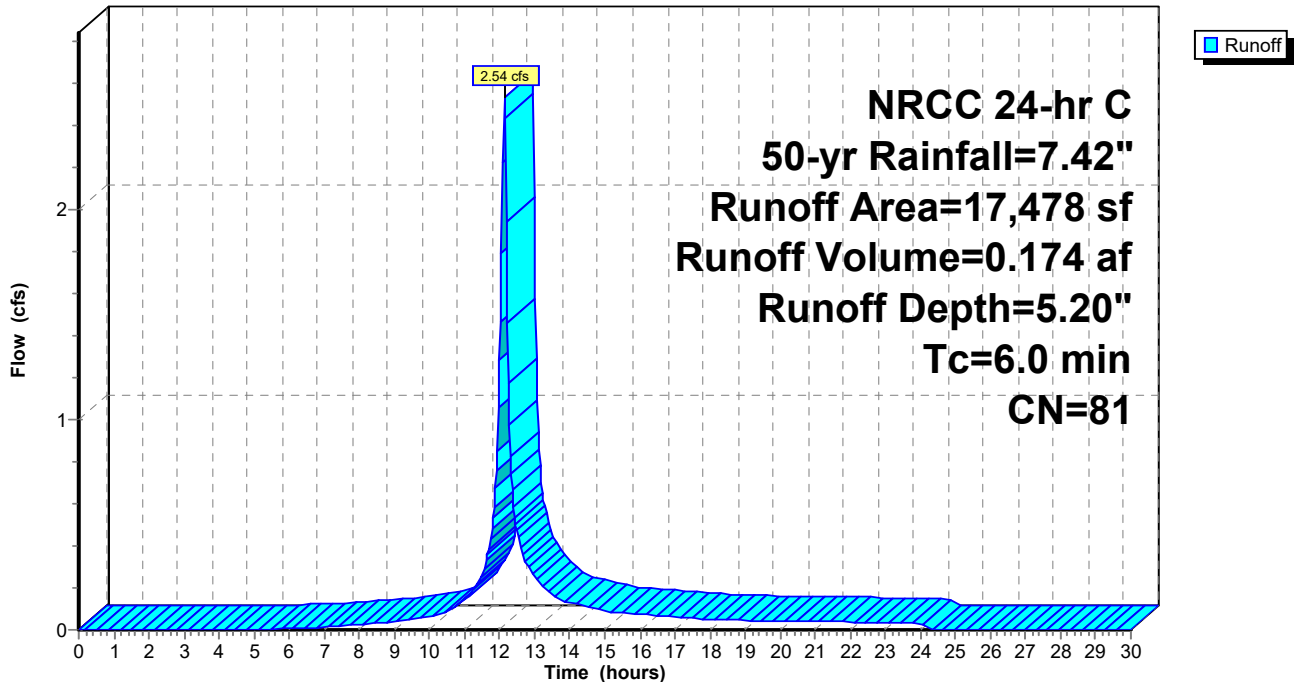
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,883	98	Paved parking, HSG D
6,950	80	>75% Grass cover, Good, HSG D
* 8,645	79	Landscaping, Good, HSG D
17,478	81	Weighted Average
15,595		89.23% Pervious Area
1,883		10.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-17: Front Lawn

Hydrograph



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Summary for Subcatchment PR-18: CCB-08

Runoff = 0.48 cfs @ 12.13 hrs, Volume= 0.034 af, Depth= 6.00"
Routed to Reach R3 : East Stormwater System

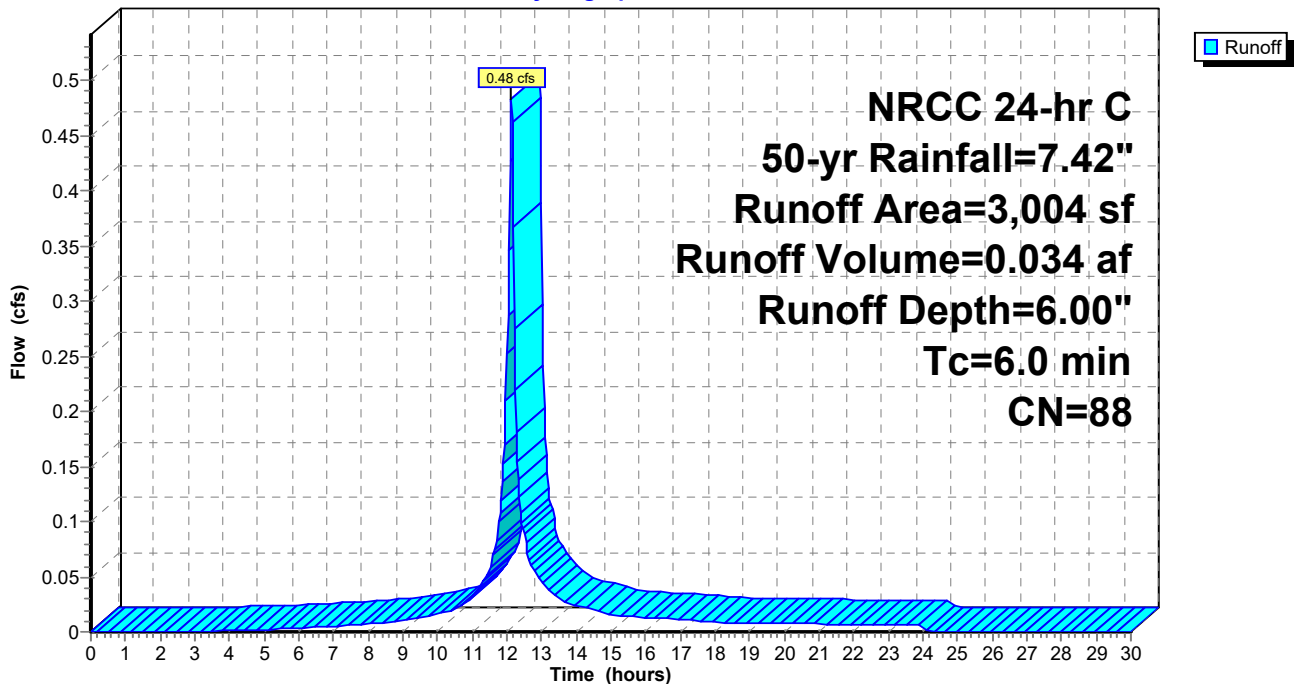
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,482	98	Paved parking, HSG D
192	80	>75% Grass cover, Good, HSG D
* 1,330	79	Landscaping, Good, HSG D
3,004	88	Weighted Average
1,522		50.67% Pervious Area
1,482		49.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-18: CCB-08

Hydrograph



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Summary for Subcatchment PR-19: CCB-07

Runoff = 0.18 cfs @ 12.13 hrs, Volume= 0.015 af, Depth= 7.18"
Routed to Reach R3 : East Stormwater System

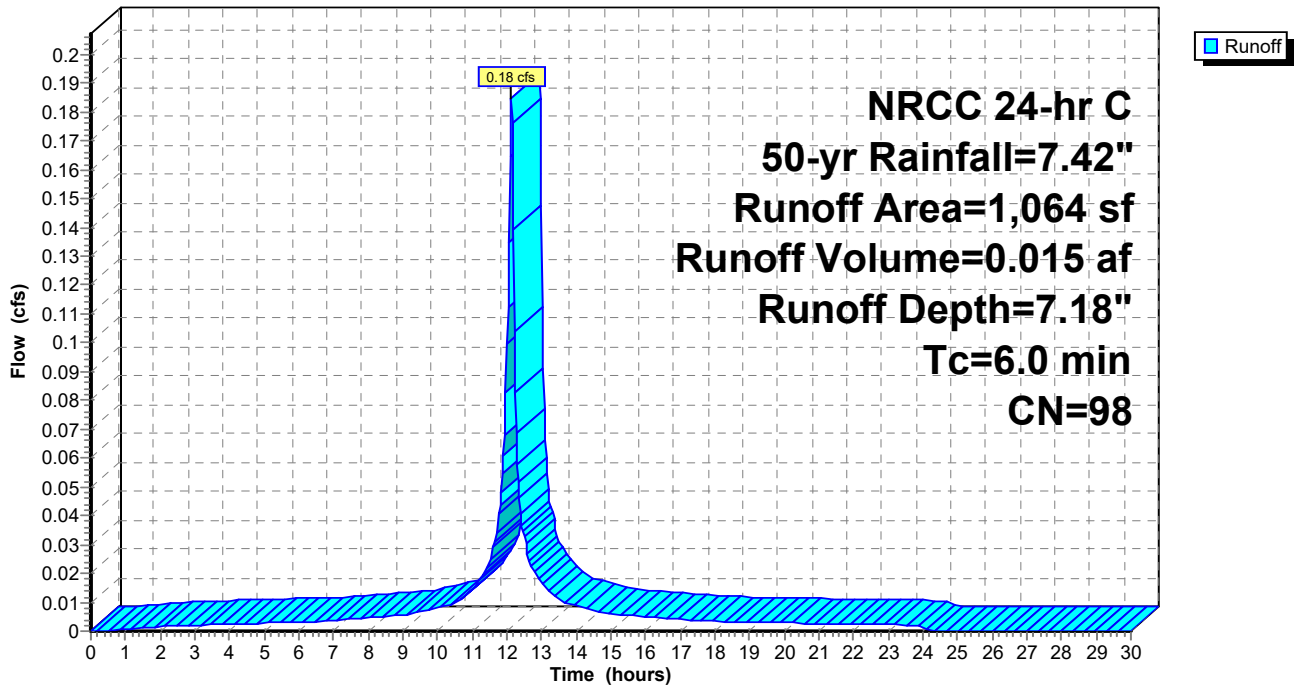
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,064	98	Paved parking, HSG D
1,064		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-19: CCB-07

Hydrograph



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Summary for Subcatchment PR-2: CCB 10

Runoff = 1.49 cfs @ 12.13 hrs, Volume= 0.110 af, Depth= 6.47"
Routed to Reach R2 : Site Stormwater System

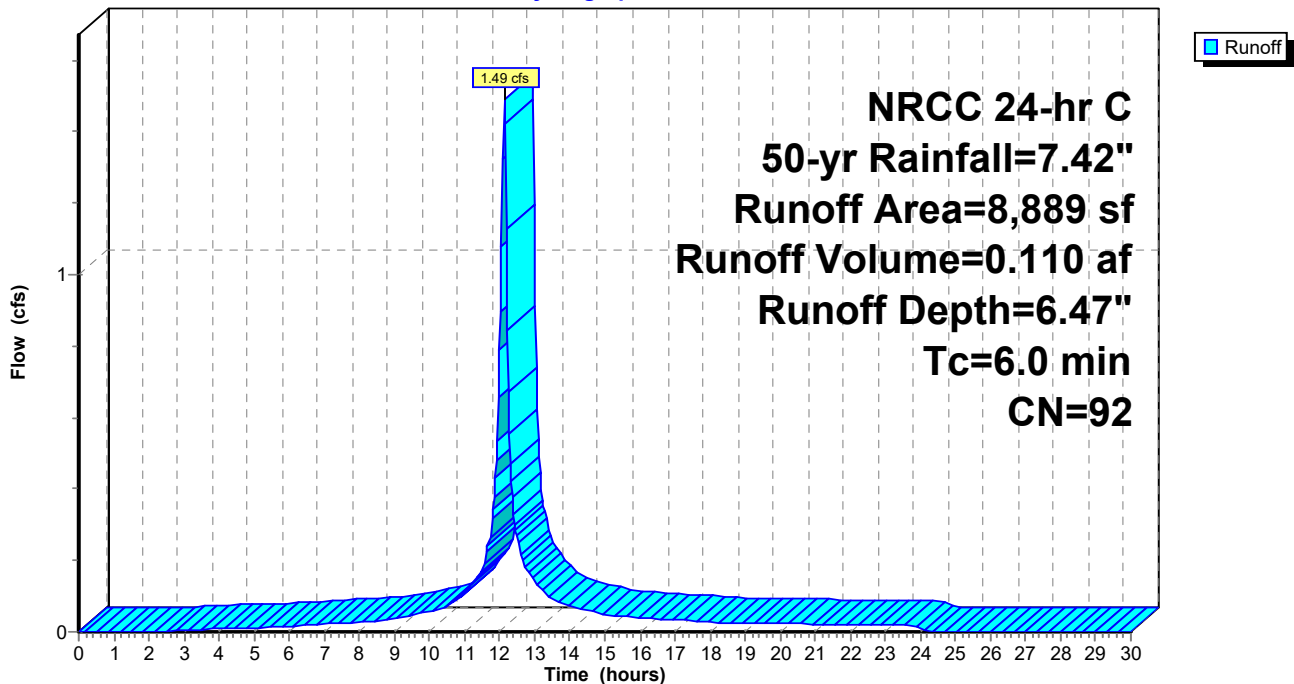
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

	Area (sf)	CN	Description
*	6,733	98	Paved parking, HSG C
*	1,772	72	Landscaping, Good, HSG C
	384	74	>75% Grass cover, Good, HSG C
	8,889	92	Weighted Average
	2,156		24.25% Pervious Area
	6,733		75.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-2: CCB 10

Hydrograph



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Summary for Subcatchment PR-20: South of entrance drive

Runoff = 0.89 cfs @ 12.13 hrs, Volume= 0.060 af, Depth= 4.97"
 Routed to Pond AP-4 : Landscaped Area

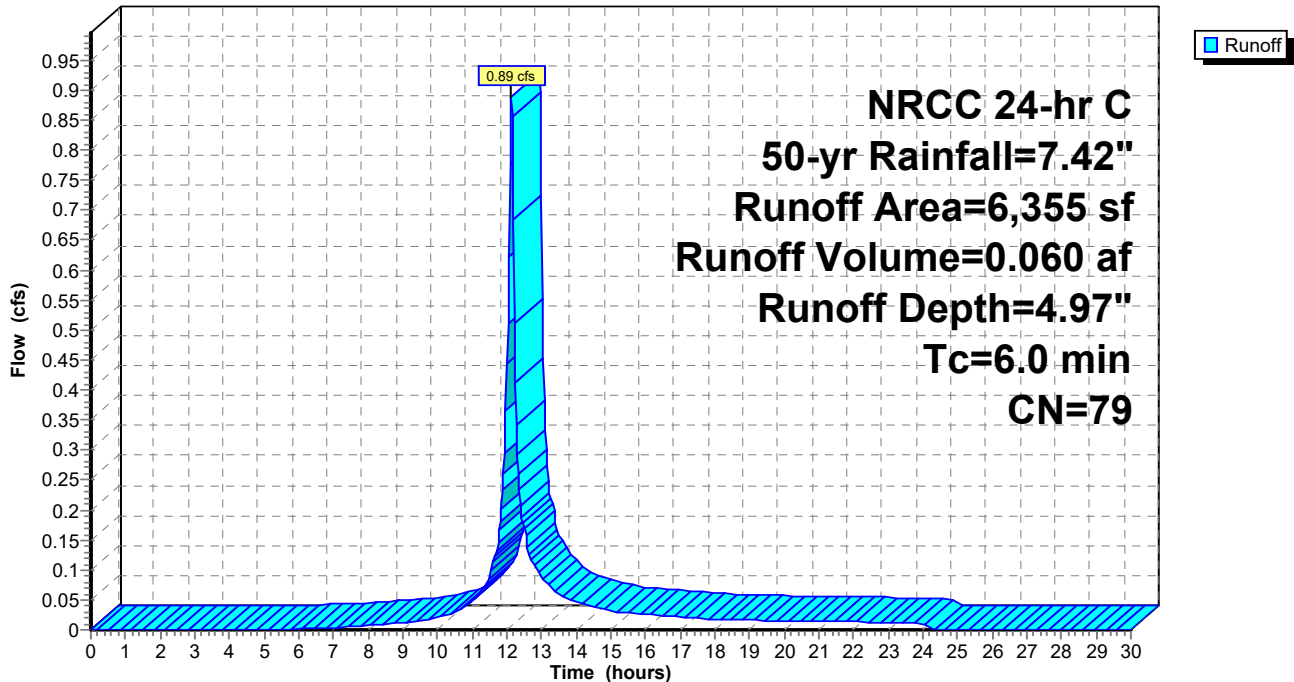
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
93	98	Paved parking, HSG D
755	80	>75% Grass cover, Good, HSG D
* 5,507	79	Landscaping, Good, HSG D
6,355	79	Weighted Average
6,262		98.54% Pervious Area
93		1.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-20: South of entrance drive

Hydrograph



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Summary for Subcatchment PR-21: Danbury Rd

Runoff = 0.20 cfs @ 12.13 hrs, Volume= 0.016 af, Depth= 7.18"
Routed to Pond AP-3 : Danbury Road

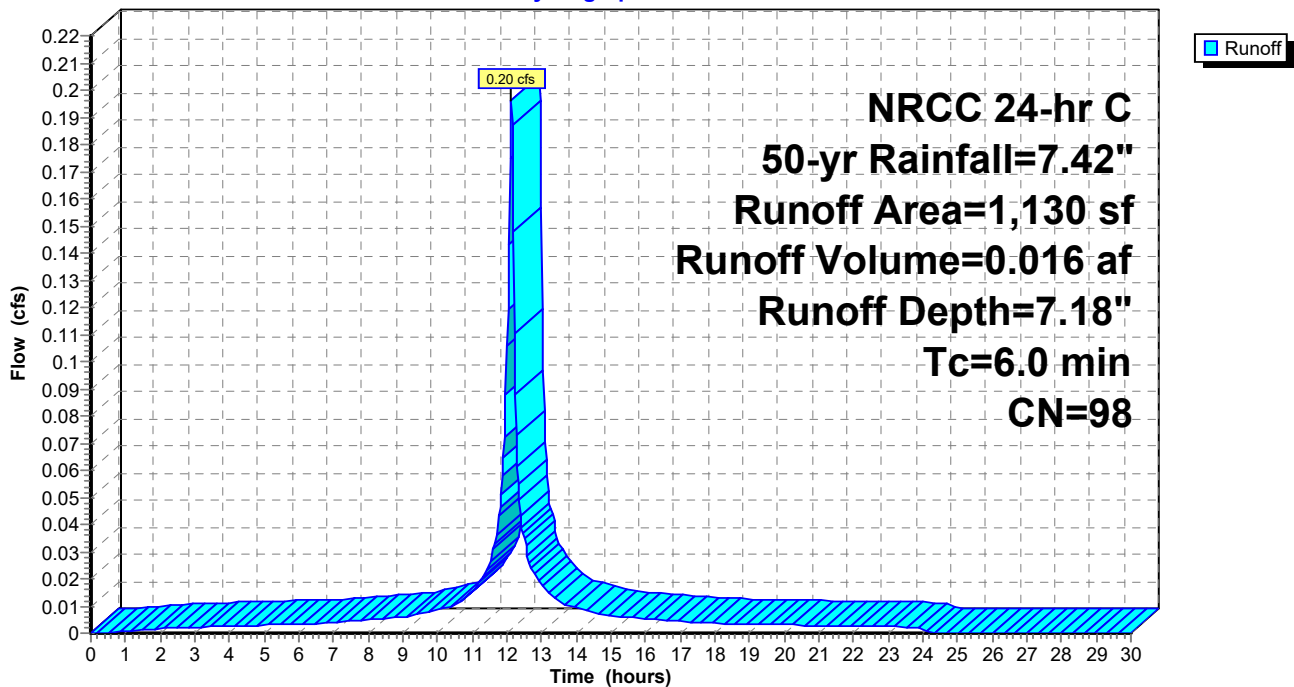
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
1,130	98	Paved parking, HSG D
1,130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-21: Danbury Rd

Hydrograph



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Summary for Subcatchment PR-3: CCB 07

Runoff = 0.89 cfs @ 12.13 hrs, Volume= 0.068 af, Depth= 6.94"
Routed to Reach R2 : Site Stormwater System

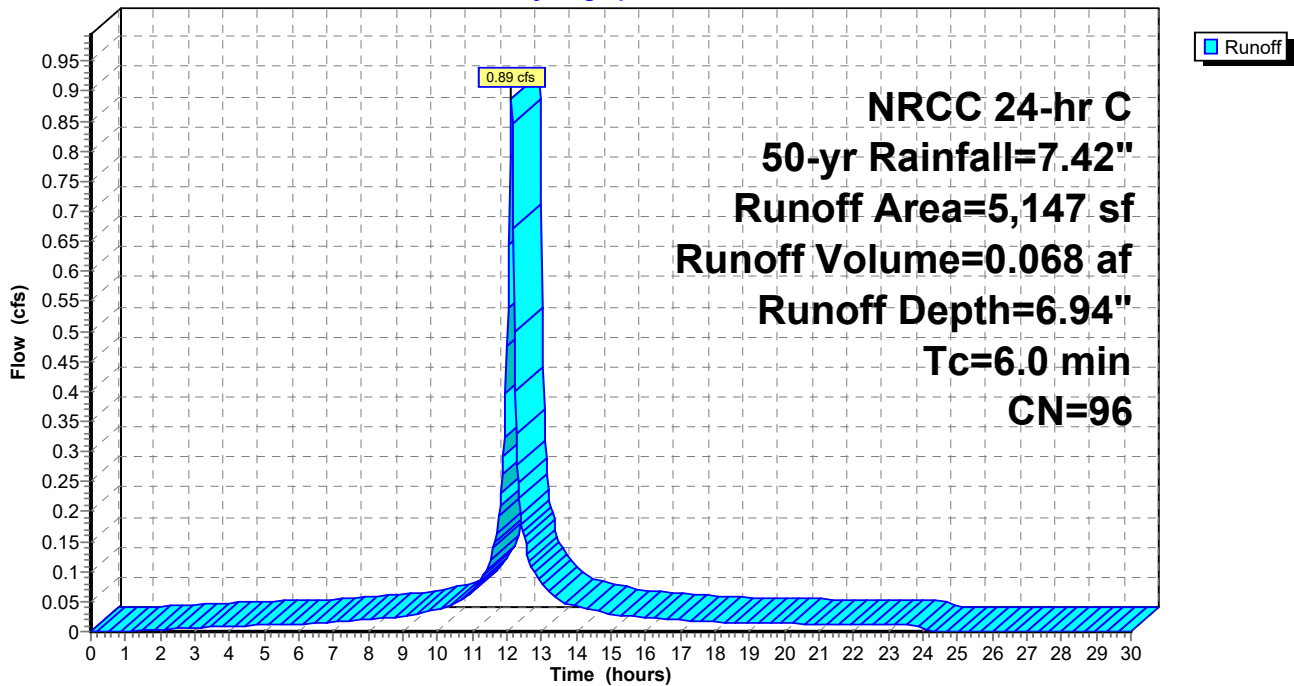
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

	Area (sf)	CN	Description
*	4,715	98	Paved parking, HSG C
*	432	72	Landscaping, Good, HSG C
	5,147	96	Weighted Average
	432		8.39% Pervious Area
	4,715		91.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-3: CCB 07

Hydrograph



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Summary for Subcatchment PR-4: CCB 06

Runoff = 0.36 cfs @ 12.13 hrs, Volume= 0.028 af, Depth= 7.06"
Routed to Reach R2 : Site Stormwater System

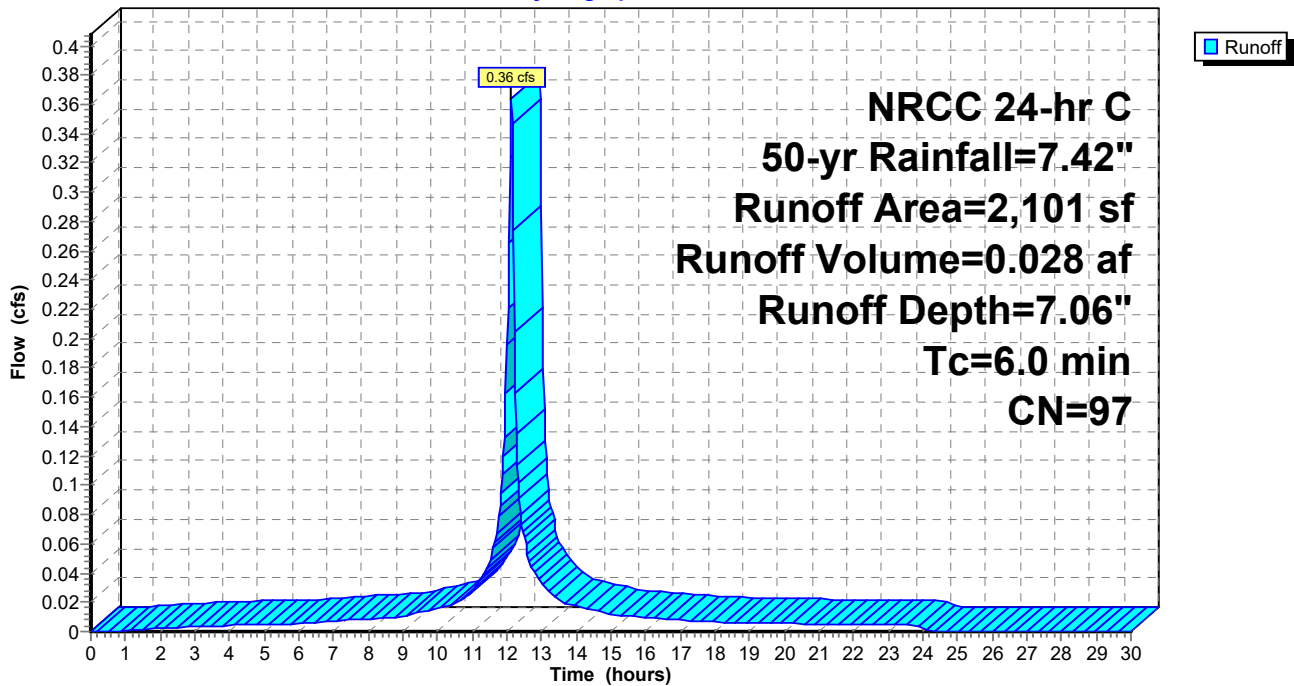
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
2,026	98	Paved parking, HSG D
* 75	79	Landscaping, Good, HSG D
2,101	97	Weighted Average
75		3.57% Pervious Area
2,026		96.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assigned minimum

Subcatchment PR-4: CCB 06

Hydrograph



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Summary for Subcatchment PR-5: South Basin

Runoff = 0.76 cfs @ 12.13 hrs, Volume= 0.052 af, Depth= 5.43"
 Routed to Pond B-1 : South Basin

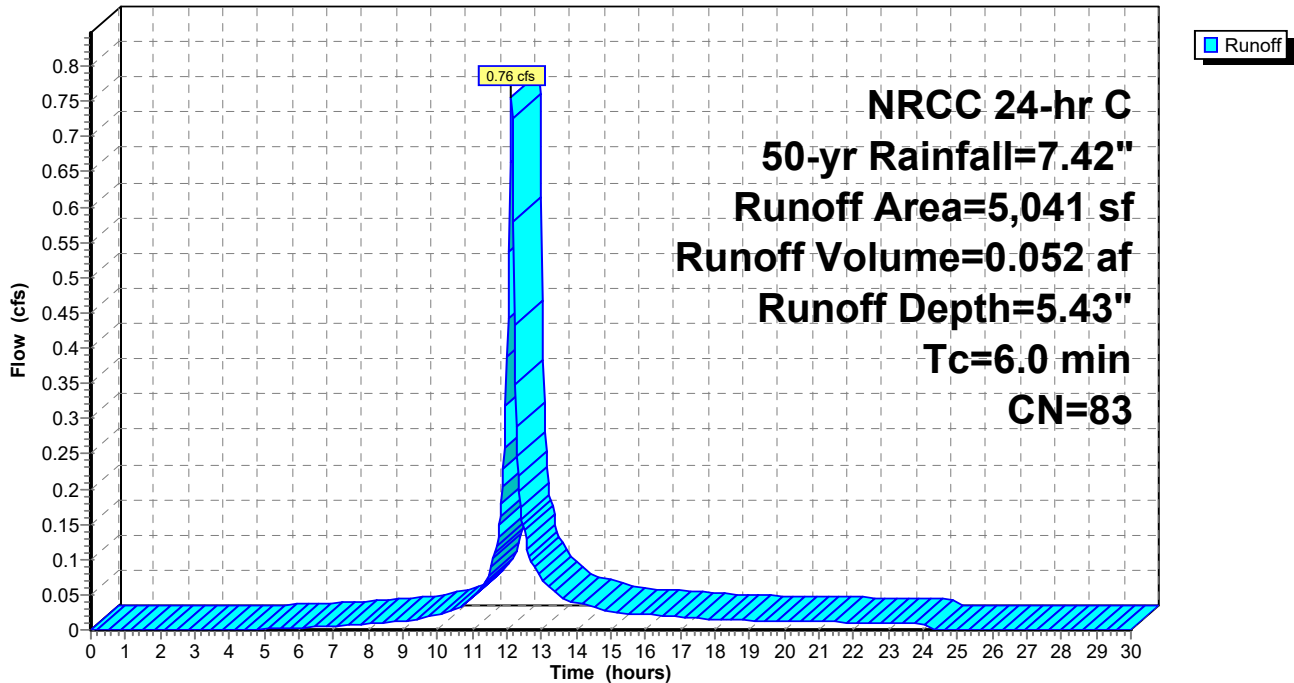
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

	Area (sf)	CN	Description
*	595	96	Permeable Paver, HSG C
*	366	96	Gravel surface, HSG C
*	2,205	72	Landscaping, Good, HSG C
*	890	98	Paved parking, HSG C
	985	80	>75% Grass cover, Good, HSG D
	5,041	83	Weighted Average
	4,151		82.34% Pervious Area
	890		17.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-5: South Basin

Hydrograph



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Summary for Subcatchment PR-6: West along river

Runoff = 2.89 cfs @ 12.13 hrs, Volume= 0.201 af, Depth= 5.54"
 Routed to Pond AP-1 : Norwalk River

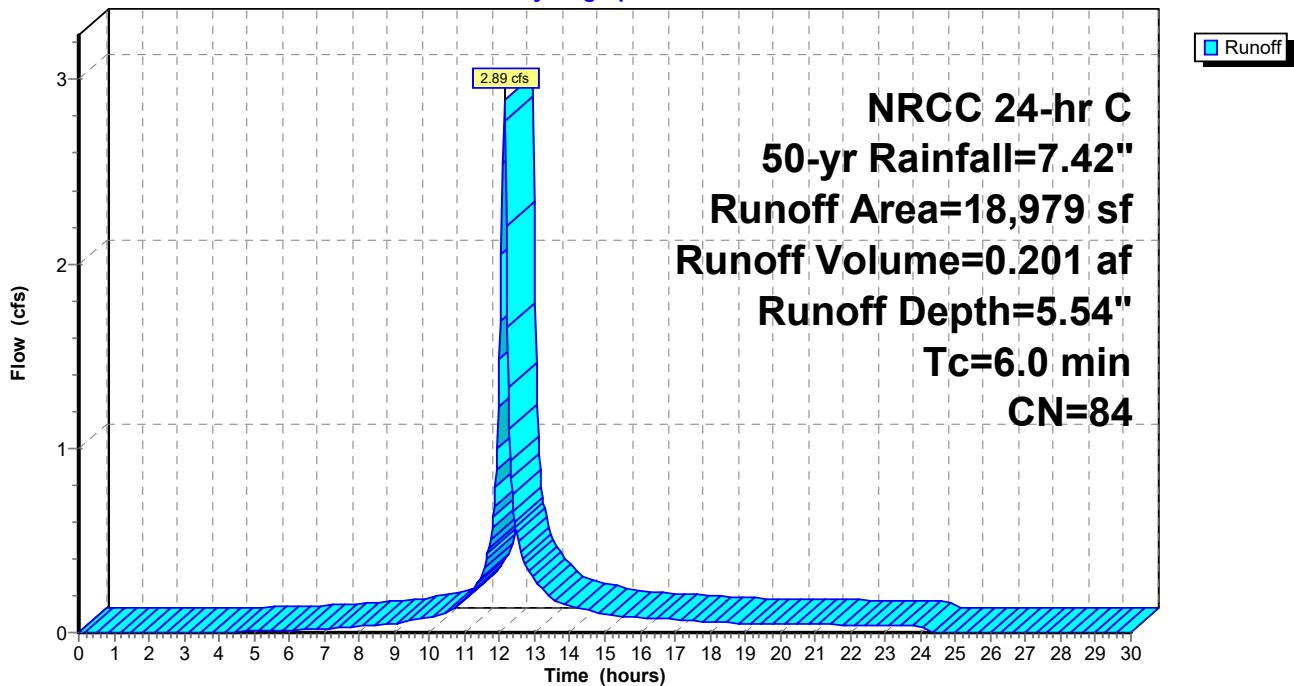
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

	Area (sf)	CN	Description
*	4,195	96	Permeable paver, HSG D
	461	96	Gravel surface, HSG D
	911	98	Paved parking, HSG D
	2,775	80	>75% Grass cover, Good, HSG D
*	6,489	79	Landscaping, Good, HSG D
	4,148	77	Woods, Good, HSG D
	18,979	84	Weighted Average
	18,068		95.20% Pervious Area
	911		4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-6: West along river

Hydrograph



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Summary for Subcatchment PR-7: North basin

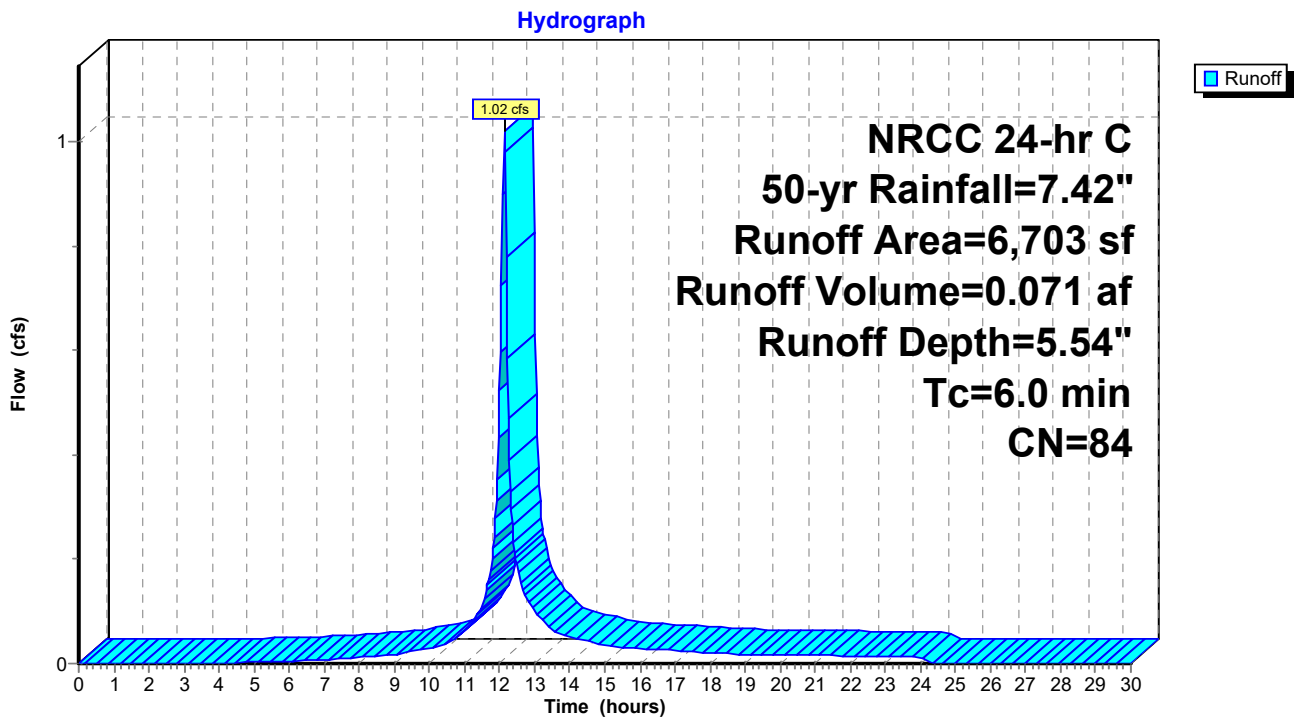
Runoff = 1.02 cfs @ 12.13 hrs, Volume= 0.071 af, Depth= 5.54"
 Routed to Pond B-2 : North Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
453	96	Gravel surface, HSG D
* 1,031	96	Permeable paver, HSG D
445	80	>75% Grass cover, Good, HSG D
* 3,601	79	Landscaping, Good, HSG D
692	77	Woods, Good, HSG D
481	98	Paved parking, HSG D
6,703	84	Weighted Average
6,222		92.82% Pervious Area
481		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7: North basin



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Summary for Subcatchment PR-7B: CCB 26

Runoff = 0.74 cfs @ 12.13 hrs, Volume= 0.055 af, Depth= 6.71"
Routed to Reach R2 : Site Stormwater System

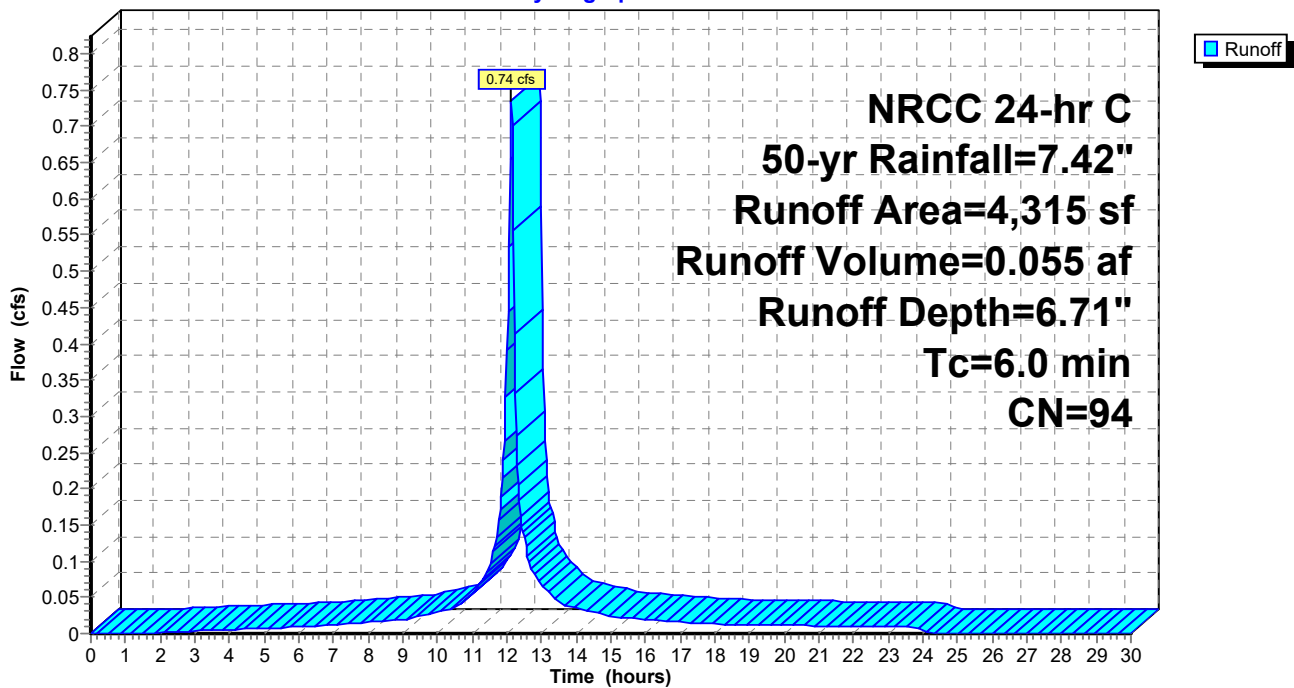
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
3,518	98	Paved parking, HSG D
* 797	79	Landscaping, Good, HSG D
4,315	94	Weighted Average
797		18.47% Pervious Area
3,518		81.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7B: CCB 26

Hydrograph



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Summary for Subcatchment PR-8: CCB 26A

Runoff = 1.10 cfs @ 12.13 hrs, Volume= 0.082 af, Depth= 6.59"
 Routed to Reach R2 : Site Stormwater System

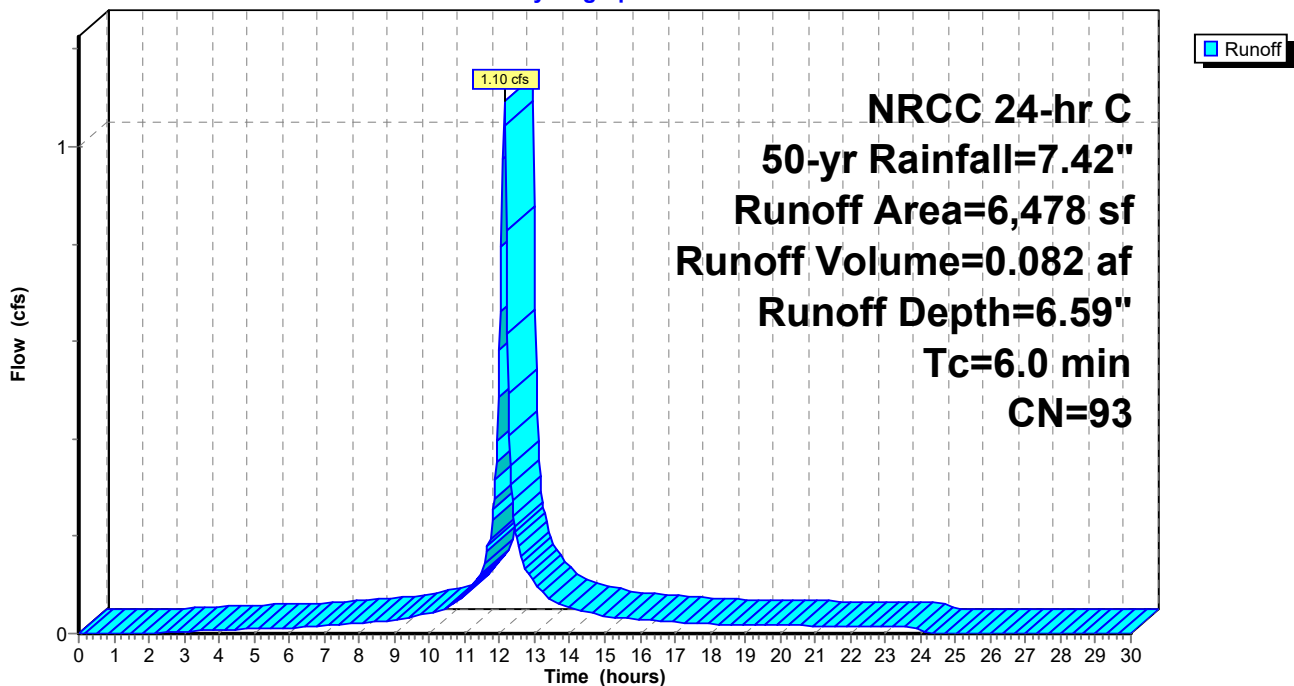
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
4,737	98	Paved parking, HSG D
* 1,741	79	Landscaping, Good, HSG D
6,478	93	Weighted Average
1,741		26.88% Pervious Area
4,737		73.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-8: CCB 26A

Hydrograph



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Summary for Subcatchment PR-9: CCB 27

Runoff = 2.06 cfs @ 12.13 hrs, Volume= 0.145 af, Depth= 5.77"
Routed to Reach R2 : Site Stormwater System

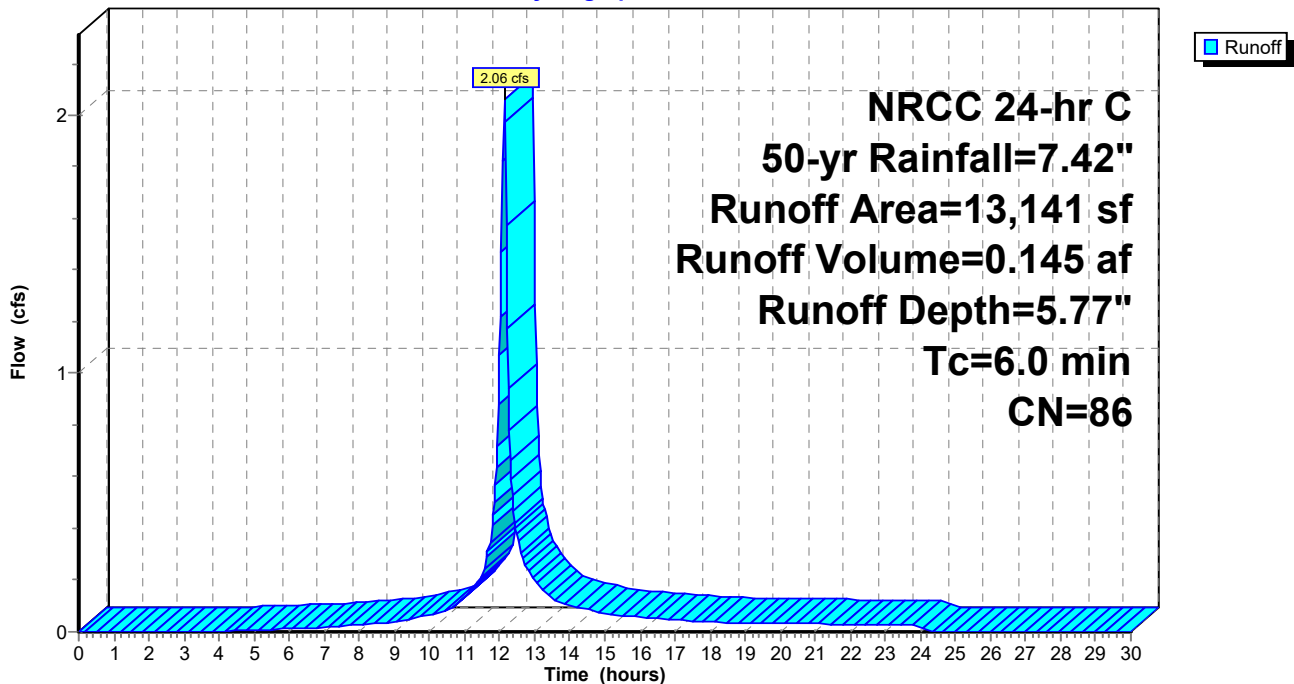
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 50-yr Rainfall=7.42"

Area (sf)	CN	Description
4,730	98	Paved parking, HSG D
817	80	>75% Grass cover, Good, HSG D
* 7,594	79	Landscaping, Good, HSG D
13,141	86	Weighted Average
8,411		64.01% Pervious Area
4,730		35.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-9: CCB 27

Hydrograph



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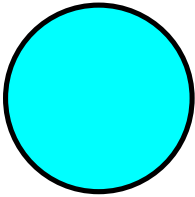
Summary for Reach R1: Roof Leader

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 7.18" for 50-yr event
Inflow = 13.91 cfs @ 12.13 hrs, Volume= 1.100 af
Outflow = 1.38 cfs @ 11.25 hrs, Volume= 1.100 af, Atten= 90%, Lag= 0.0 min
Routed to Pond S-2 : Subsurface Infiltration System

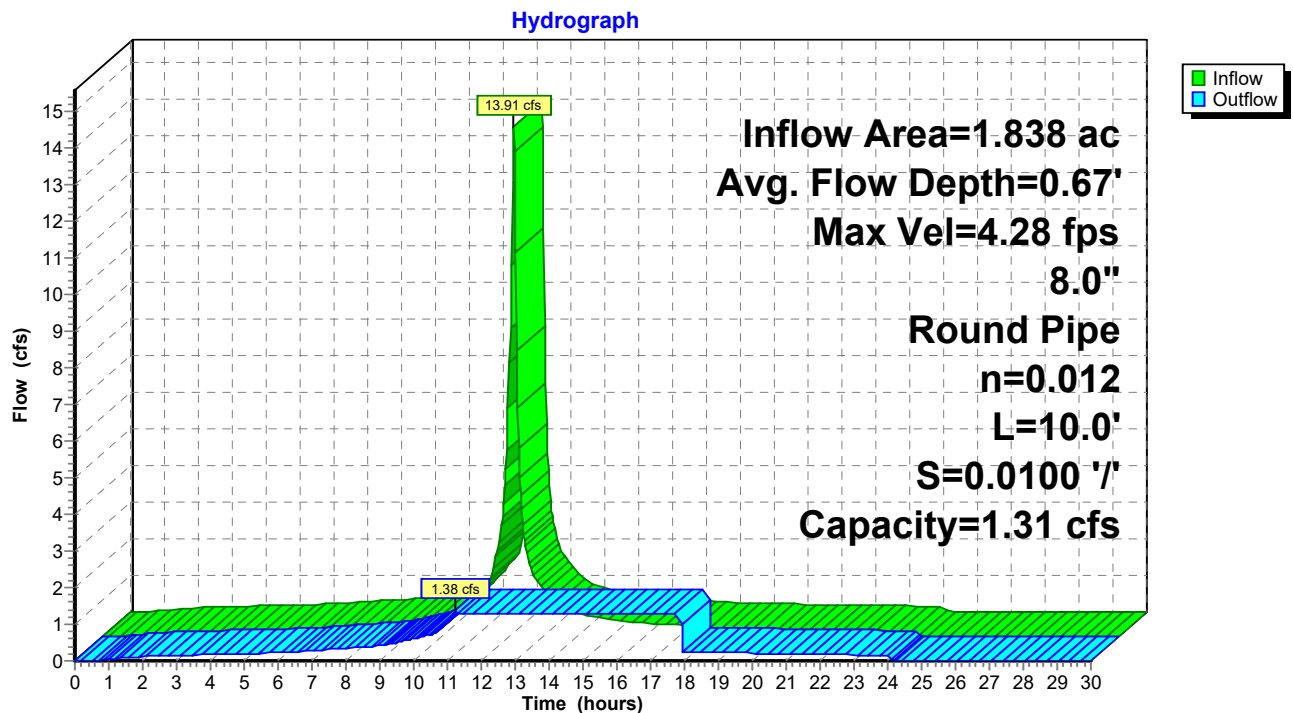
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.28 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.05 fps, Avg. Travel Time= 0.1 min

Peak Storage= 3 cf @ 11.28 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 0.00'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 10.0' Slope= 0.0100 '/'
Inlet Invert= 142.20', Outlet Invert= 142.10'



Reach R1: Roof Leader

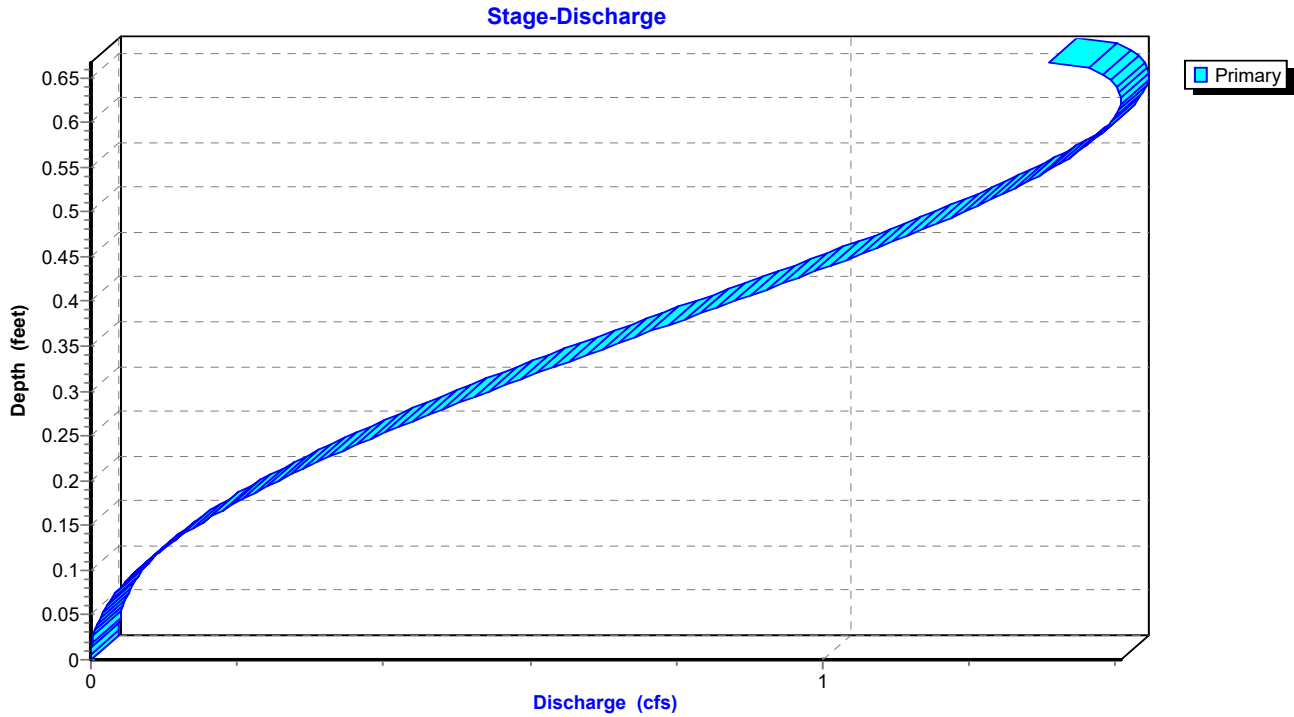


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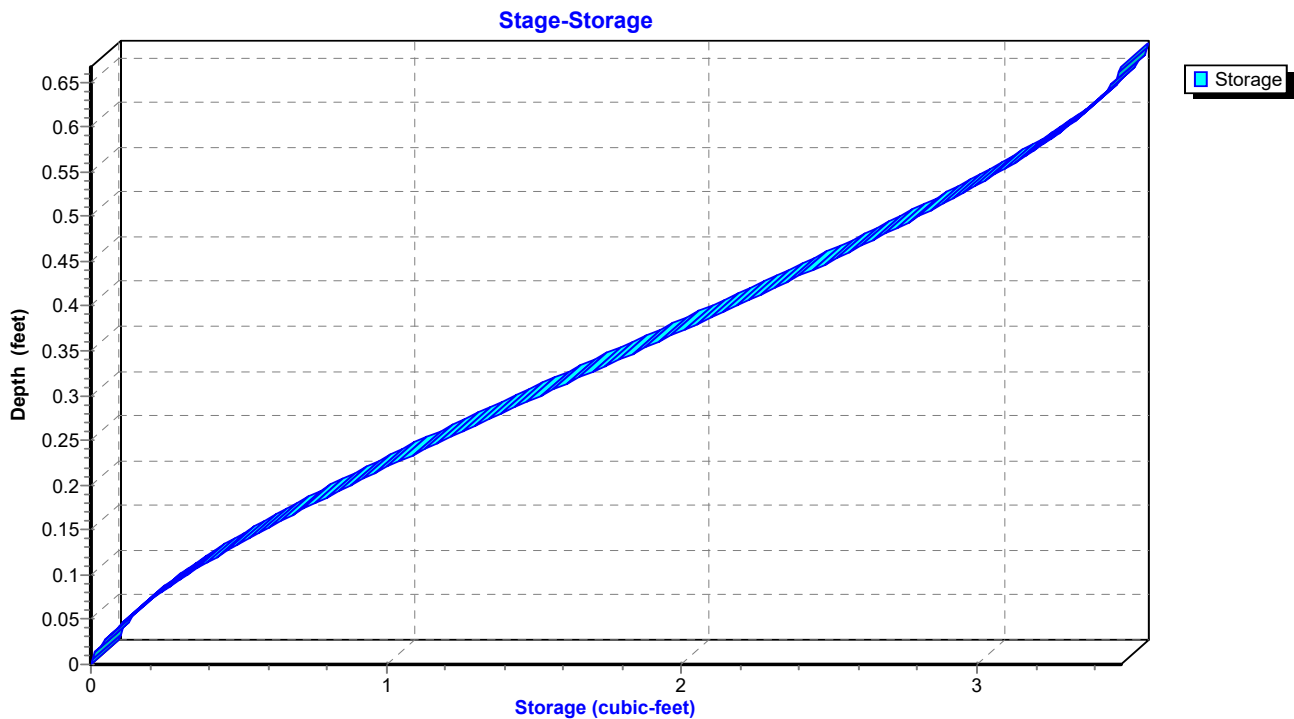
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Reach R1: Roof Leader



Reach R1: Roof Leader



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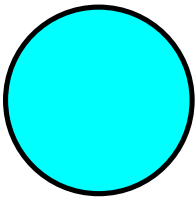
Summary for Reach R2: Site Stormwater System

Inflow Area = 1.221 ac, 71.23% Impervious, Inflow Depth = 6.51" for 50-yr event
Inflow = 8.90 cfs @ 12.13 hrs, Volume= 0.662 af
Outflow = 5.26 cfs @ 12.04 hrs, Volume= 0.662 af, Atten= 41%, Lag= 0.0 min
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.58 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 0.7 min

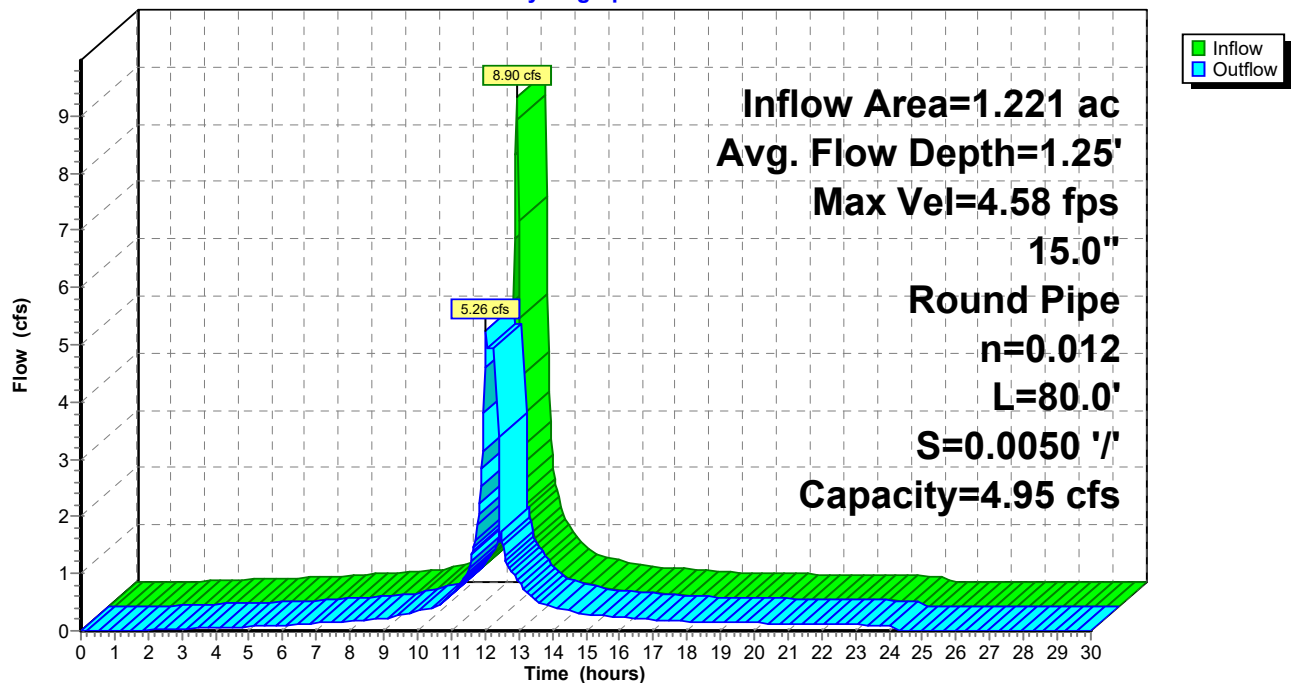
Peak Storage= 98 cf @ 12.06 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.95 cfs

15.0" Round Pipe
n= 0.012
Length= 80.0' Slope= 0.0050 '/'
Inlet Invert= 138.00', Outlet Invert= 137.60'



Reach R2: Site Stormwater System

Hydrograph

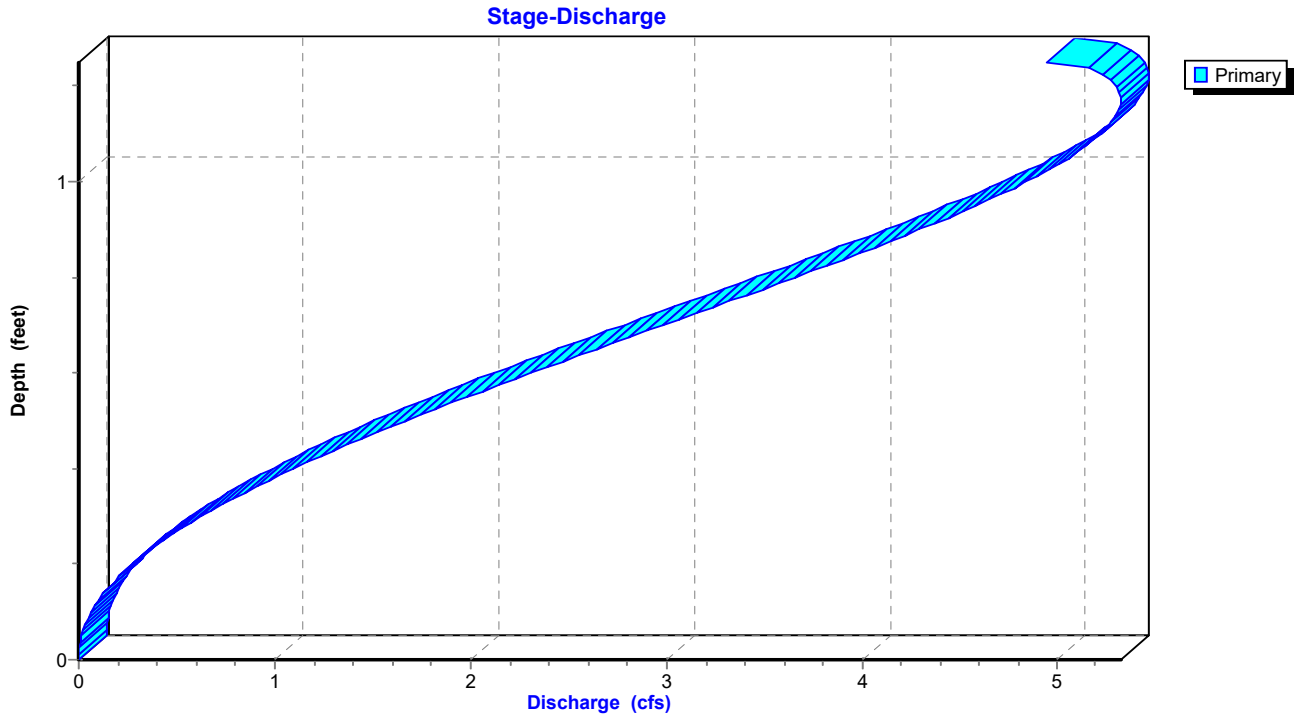


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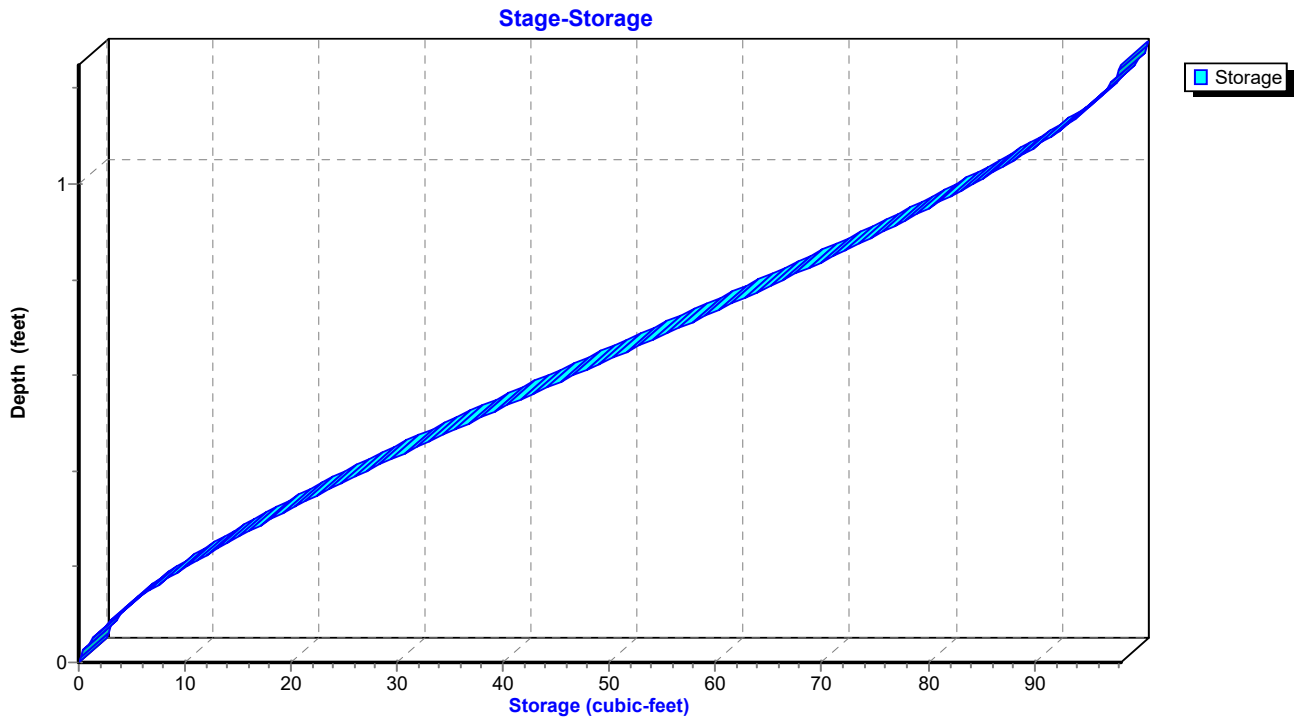
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Reach R2: Site Stormwater System



Reach R2: Site Stormwater System



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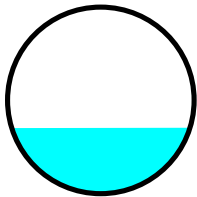
Summary for Reach R3: East Stormwater System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 2.74" for 50-yr event
Inflow = 1.85 cfs @ 12.21 hrs, Volume= 0.148 af
Outflow = 1.86 cfs @ 12.21 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.3 min
Routed to Pond S-1 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.82 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 1.3 min

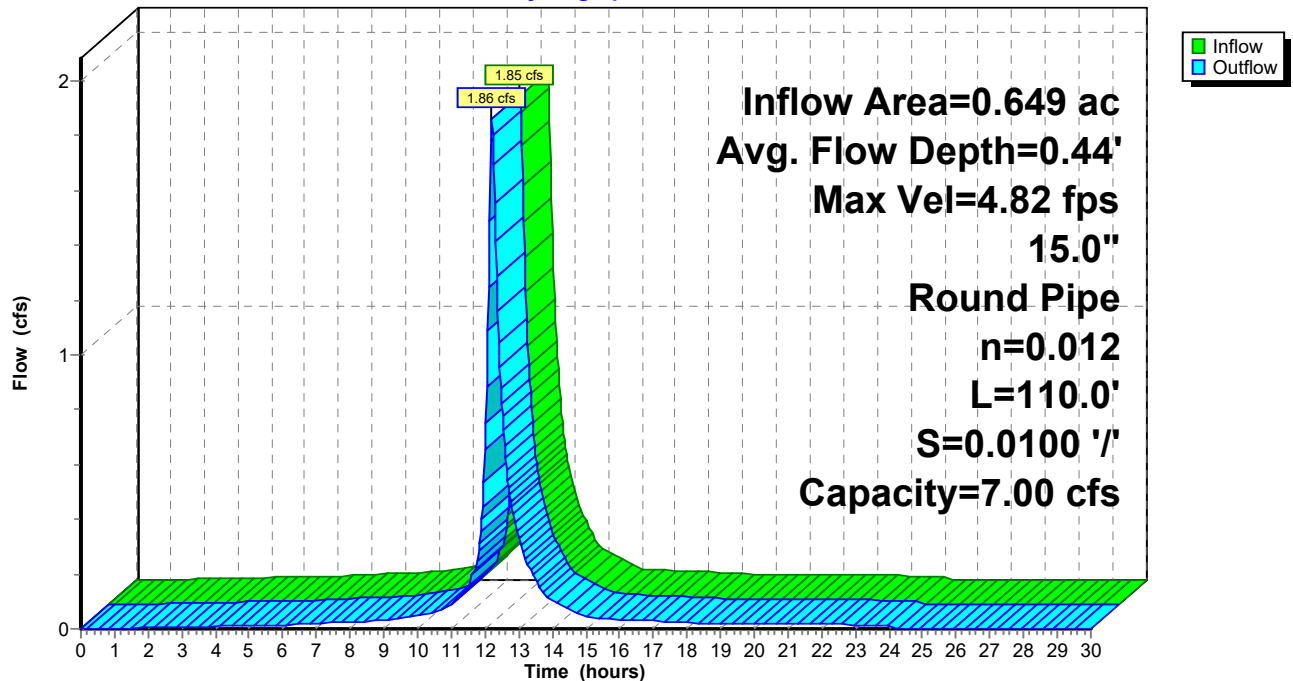
Peak Storage= 42 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.44' , Surface Width= 1.19'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe
n= 0.012
Length= 110.0' Slope= 0.0100 '/'
Inlet Invert= 144.80', Outlet Invert= 143.70'



Reach R3: East Stormwater System

Hydrograph

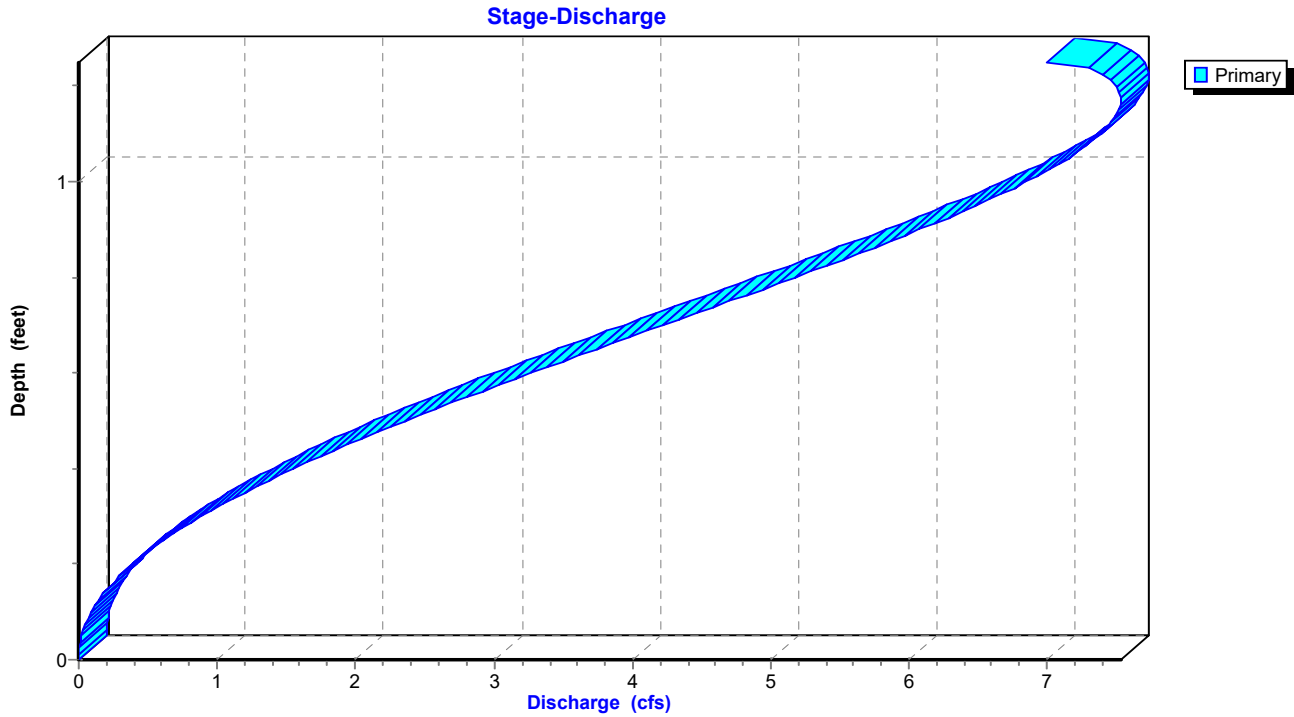


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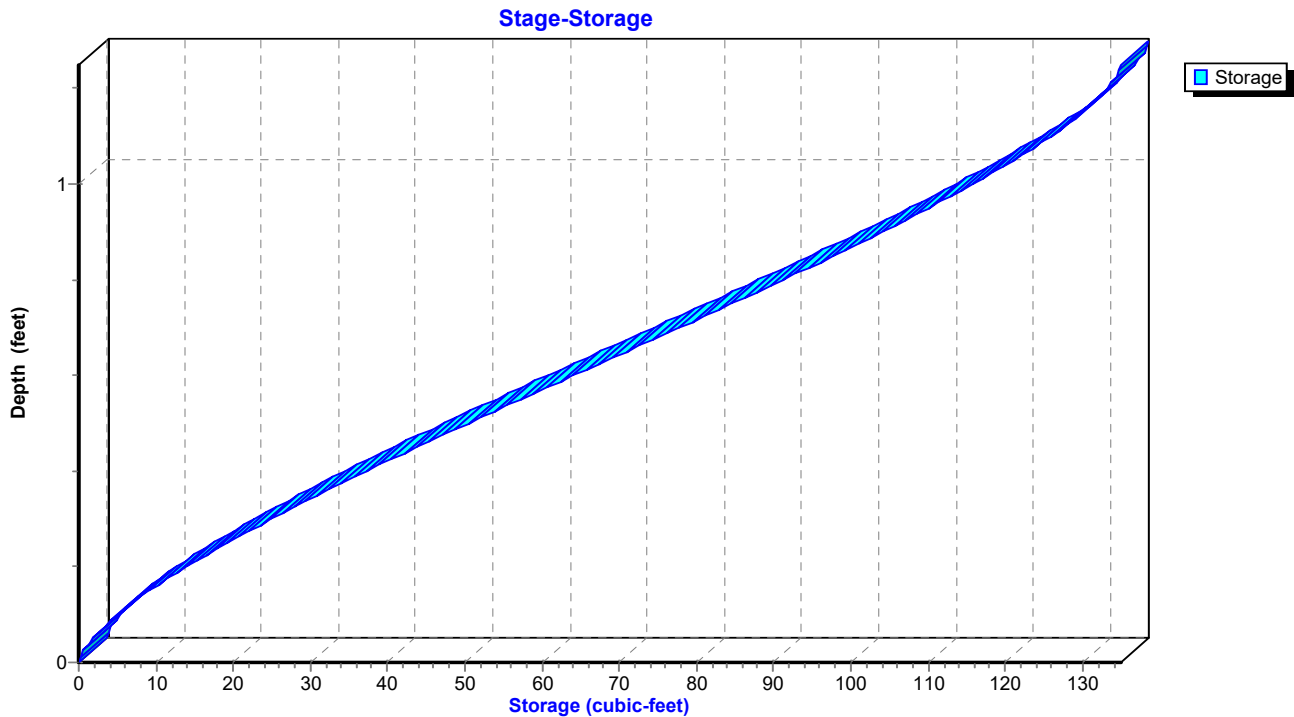
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Reach R3: East Stormwater System



Reach R3: East Stormwater System



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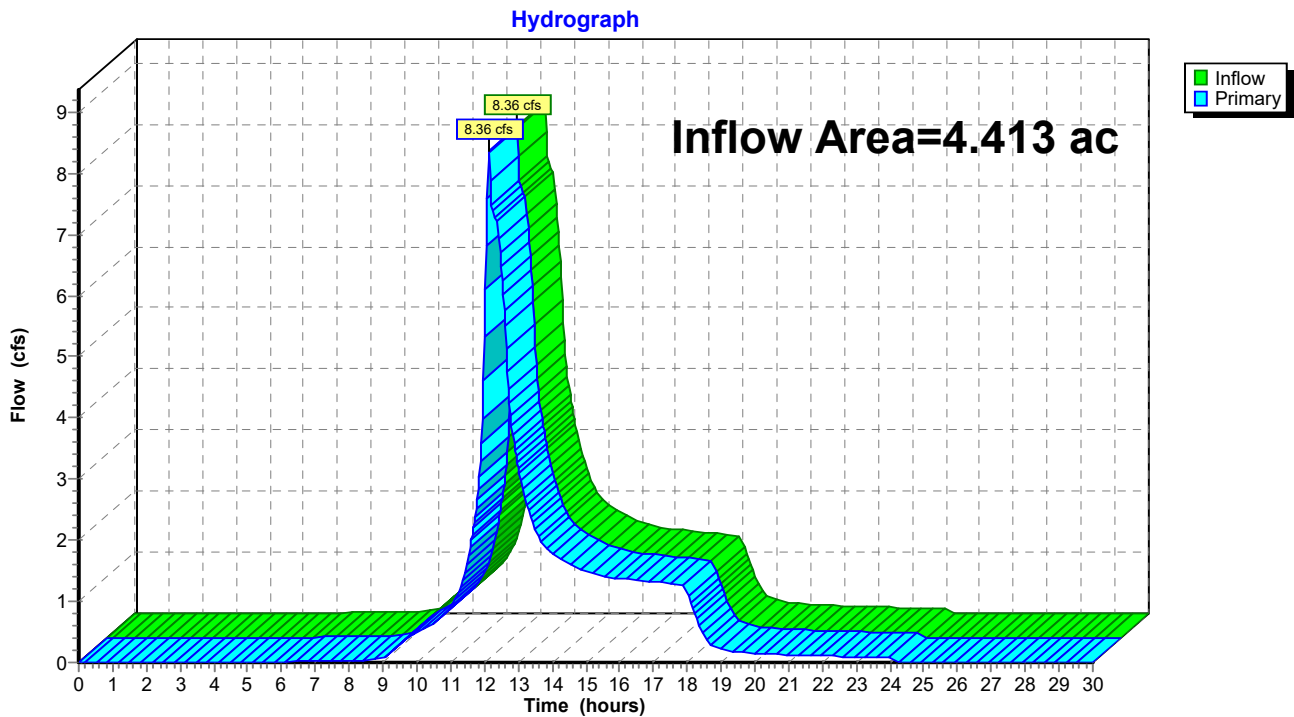
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Summary for Pond AP-1: Norwalk River

Inflow Area = 4.413 ac, 66.52% Impervious, Inflow Depth = 4.06" for 50-yr event
Inflow = 8.36 cfs @ 12.14 hrs, Volume= 1.492 af
Primary = 8.36 cfs @ 12.14 hrs, Volume= 1.492 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River



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Summary for Pond AP-2: Front Lawn Rain Garden

Inflow Area = 0.475 ac, 24.65% Impervious, Inflow Depth = 5.51" for 50-yr event
Inflow = 3.10 cfs @ 12.13 hrs, Volume= 0.218 af
Outflow = 1.38 cfs @ 12.25 hrs, Volume= 0.218 af, Atten= 55%, Lag= 7.3 min
Discarded = 0.15 cfs @ 12.25 hrs, Volume= 0.166 af
Primary = 1.23 cfs @ 12.25 hrs, Volume= 0.052 af
Routed to Reach R3 : East Stormwater System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 149.18' @ 12.25 hrs Surf.Area= 3,311 sf Storage= 2,977 cf

Plug-Flow detention time= 141.6 min calculated for 0.218 af (100% of inflow)
Center-of-Mass det. time= 141.5 min (938.2 - 796.7)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	6,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	1,985	0	0
149.00	2,833	2,409	2,409
150.00	5,420	4,127	6,536

Device	Routing	Invert	Outlet Devices
#1	Primary	141.00'	15.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 141.00' / 140.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	149.00'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	148.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.15 cfs @ 12.25 hrs HW=149.18' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.15 cfs)

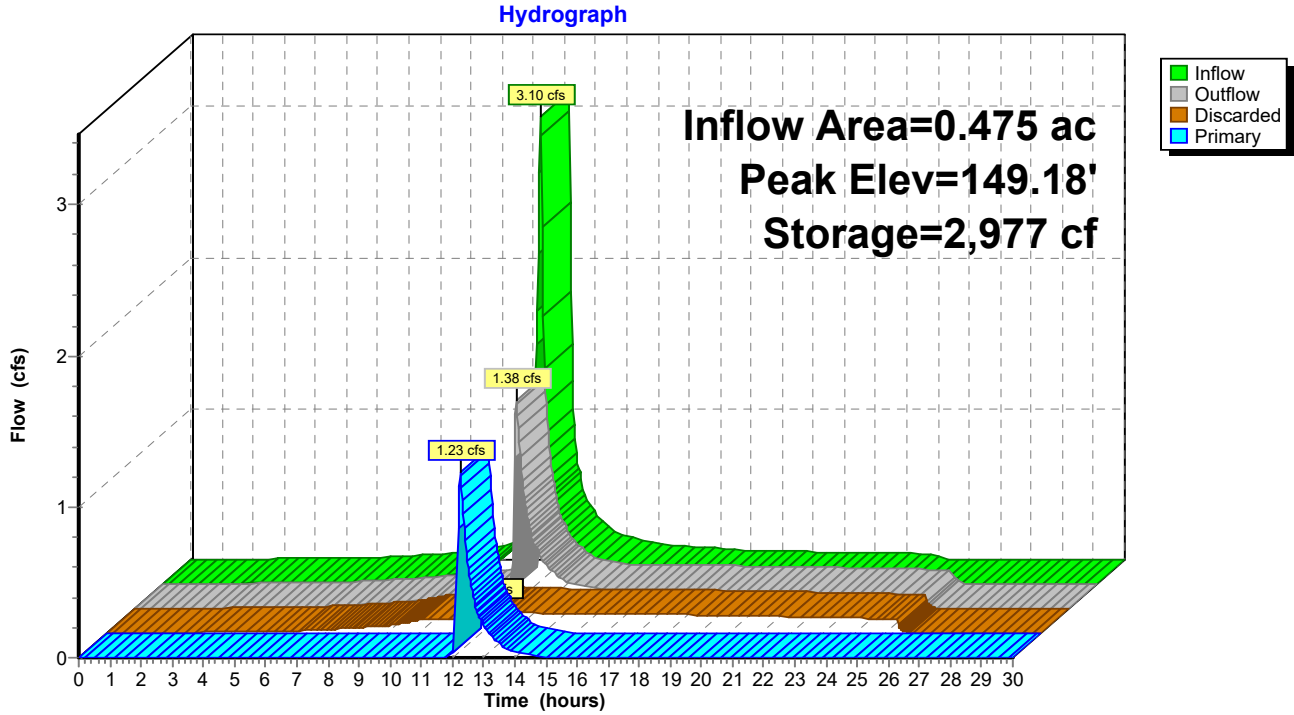
Primary OutFlow Max=1.21 cfs @ 12.25 hrs HW=149.18' (Free Discharge)
↑**1=Culvert** (Passes 1.21 cfs of 16.25 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 1.21 cfs @ 1.40 fps)

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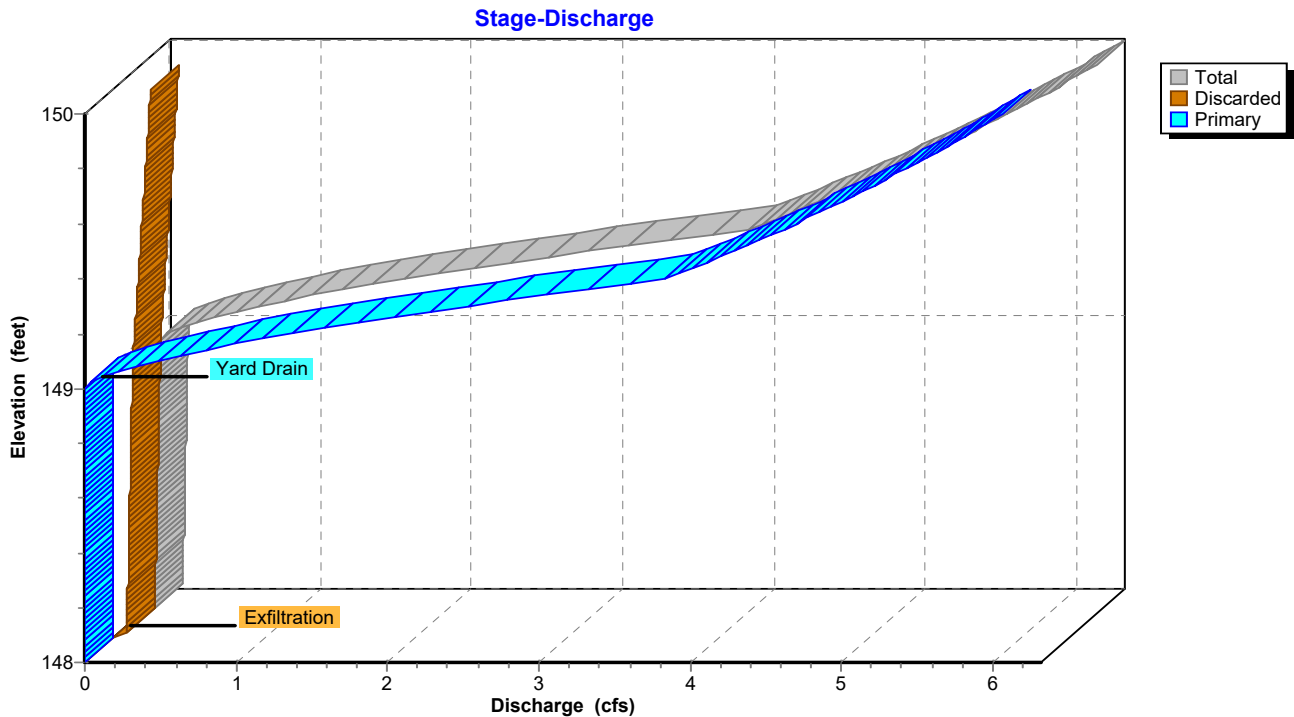
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Pond AP-2: Front Lawn Rain Garden



Pond AP-2: Front Lawn Rain Garden

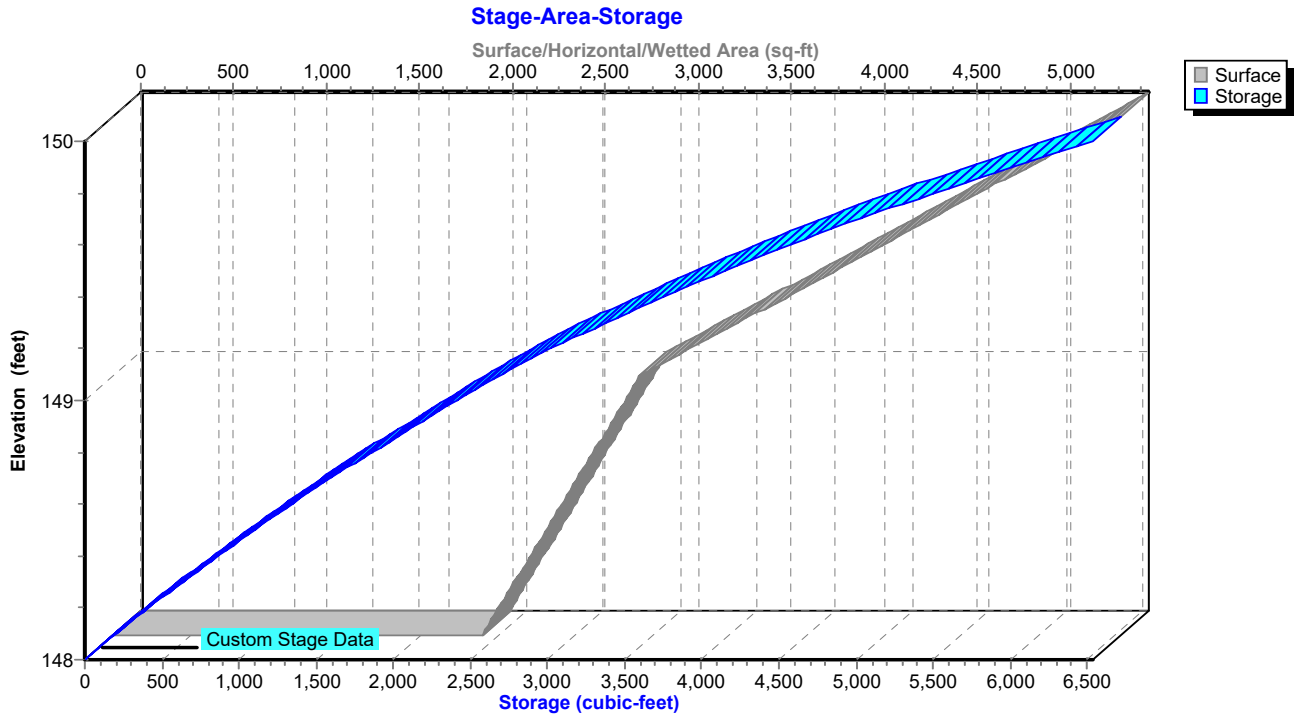


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Pond AP-2: Front Lawn Rain Garden



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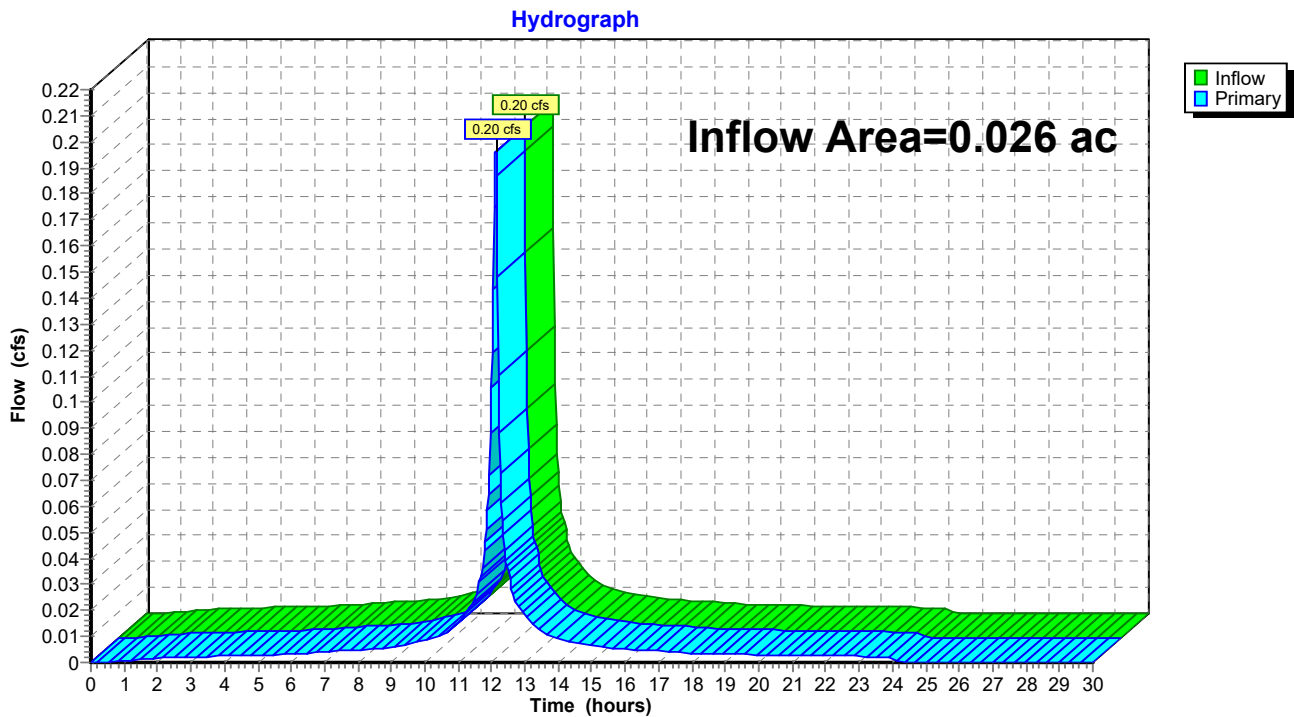
Proposed Conditions
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Summary for Pond AP-3: Danbury Road

Inflow Area = 0.026 ac, 100.00% Impervious, Inflow Depth = 7.18" for 50-yr event
Inflow = 0.20 cfs @ 12.13 hrs, Volume= 0.016 af
Primary = 0.20 cfs @ 12.13 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-3: Danbury Road



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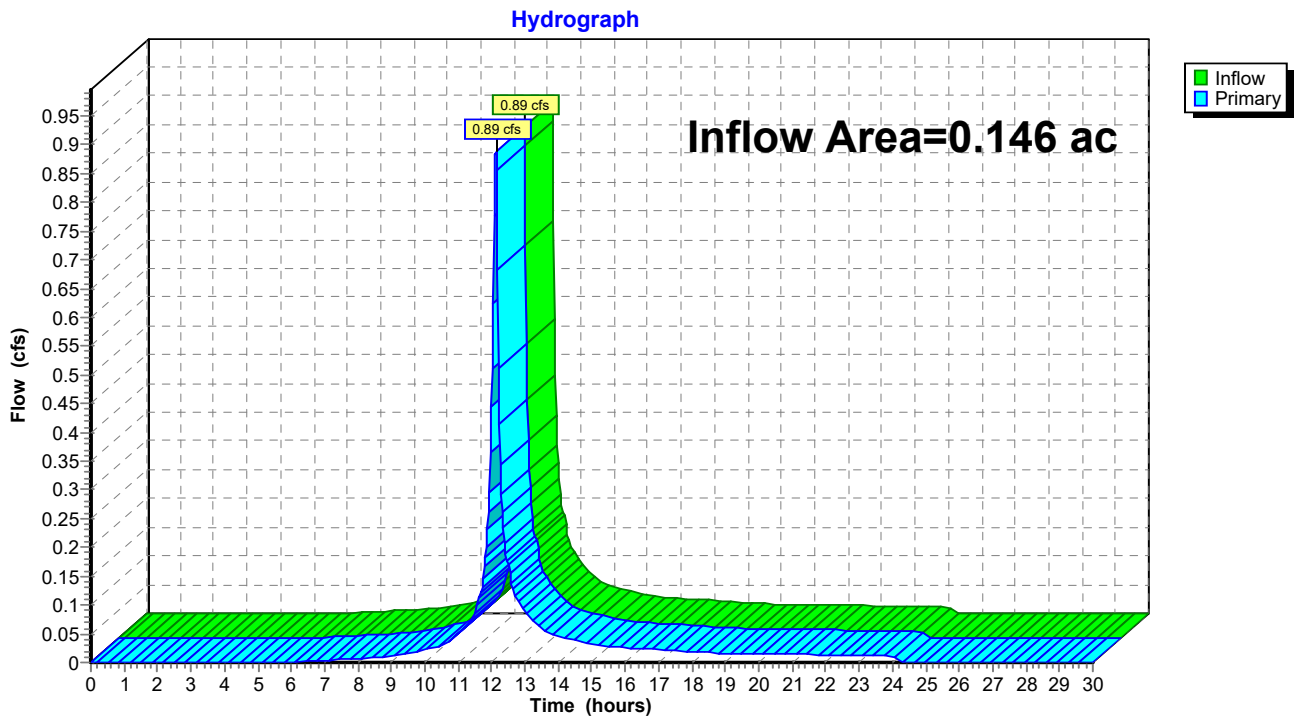
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Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.146 ac, 1.46% Impervious, Inflow Depth = 4.97" for 50-yr event
Inflow = 0.89 cfs @ 12.13 hrs, Volume= 0.060 af
Primary = 0.89 cfs @ 12.13 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Summary for Pond B-1: South Basin

Inflow Area = 0.116 ac, 17.66% Impervious, Inflow Depth = 5.43" for 50-yr event
Inflow = 0.76 cfs @ 12.13 hrs, Volume= 0.052 af
Outflow = 0.74 cfs @ 12.15 hrs, Volume= 0.052 af, Atten= 3%, Lag= 1.1 min
Discarded = 0.03 cfs @ 12.15 hrs, Volume= 0.030 af
Primary = 0.71 cfs @ 12.15 hrs, Volume= 0.023 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 140.03' @ 12.15 hrs Surf.Area= 550 sf Storage= 399 cf

Plug-Flow detention time= 96.2 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 96.2 min (901.1 - 804.8)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,118 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	228	0	0
140.00	539	384	384
141.00	929	734	1,118

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	139.90'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.15 hrs HW=140.03' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

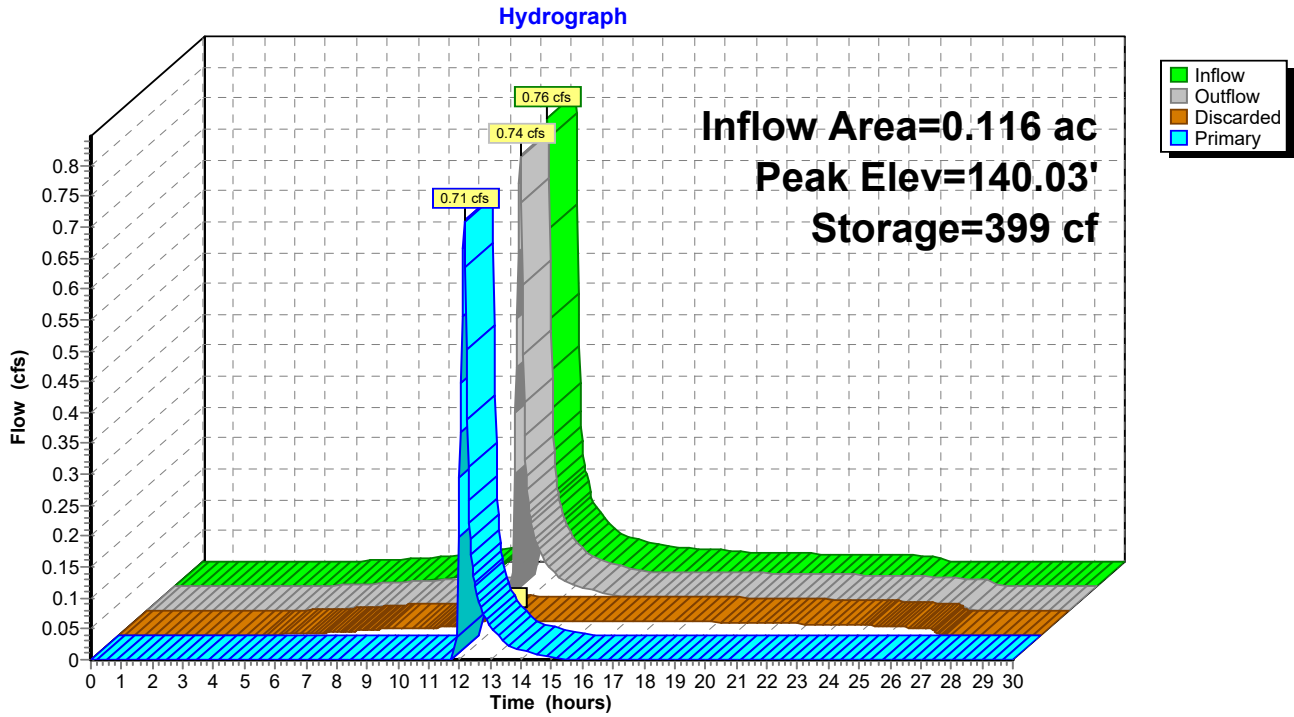
Primary OutFlow Max=0.70 cfs @ 12.15 hrs HW=140.03' (Free Discharge)
↑**1=Culvert** (Passes 0.70 cfs of 2.03 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.70 cfs @ 1.17 fps)

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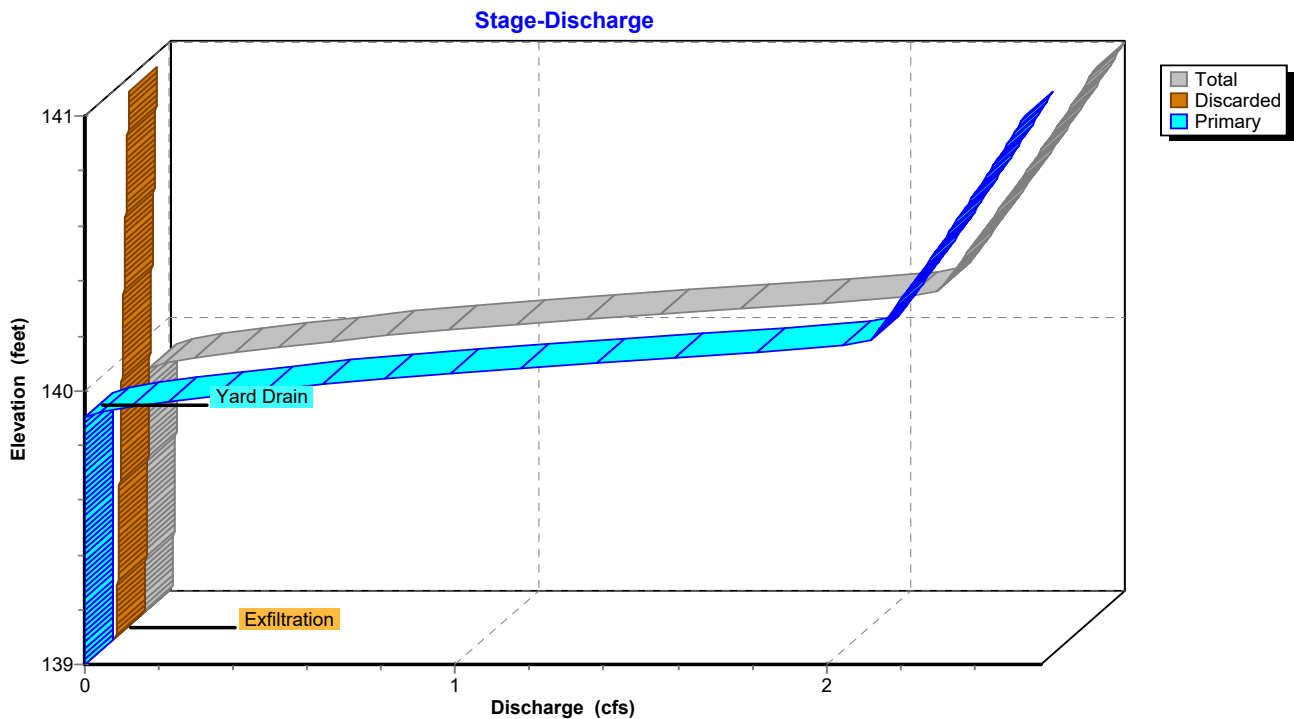
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Pond B-1: South Basin



Pond B-1: South Basin



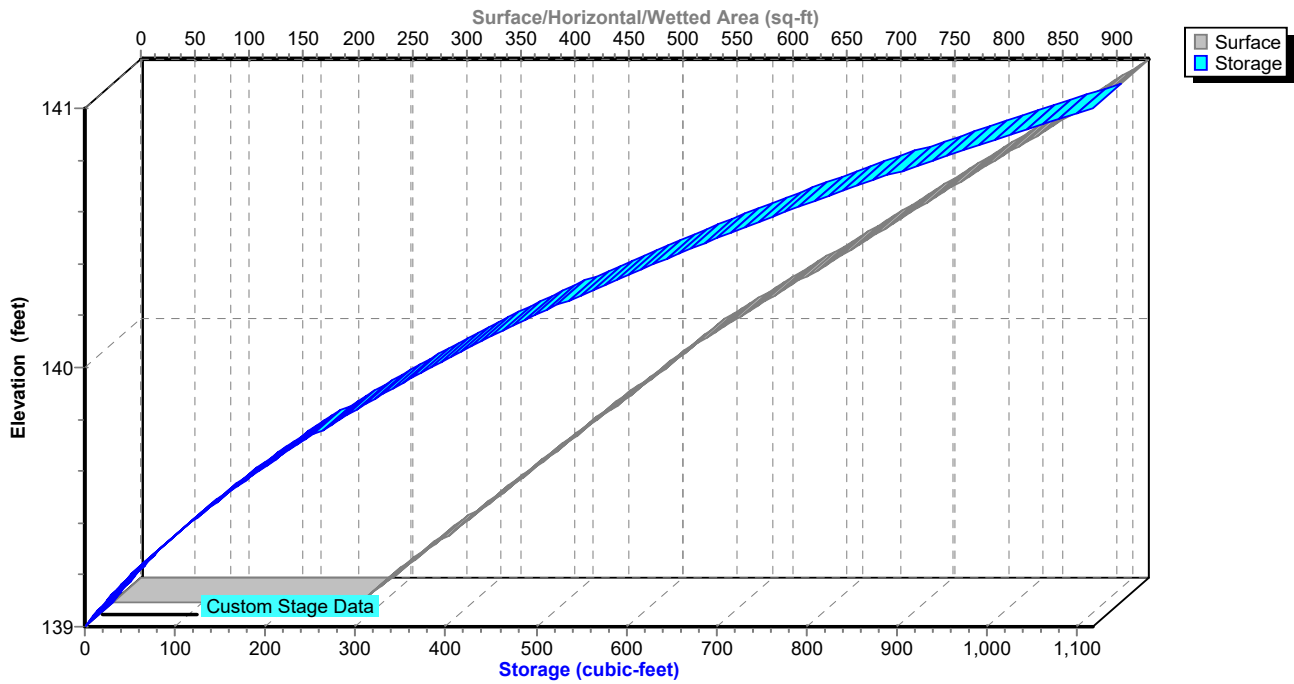
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Pond B-1: South Basin

Stage-Area-Storage



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Summary for Pond B-2: North Basin

Inflow Area = 0.154 ac, 7.18% Impervious, Inflow Depth = 5.54" for 50-yr event
Inflow = 1.02 cfs @ 12.13 hrs, Volume= 0.071 af
Outflow = 0.94 cfs @ 12.16 hrs, Volume= 0.071 af, Atten= 8%, Lag= 1.9 min
Discarded = 0.04 cfs @ 12.16 hrs, Volume= 0.047 af
Primary = 0.90 cfs @ 12.16 hrs, Volume= 0.024 af
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.95' @ 12.16 hrs Surf.Area= 913 sf Storage= 713 cf

Plug-Flow detention time= 100.6 min calculated for 0.071 af (100% of inflow)
Center-of-Mass det. time= 100.5 min (902.4 - 801.9)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	589	0	0
140.00	930	760	760
141.00	1,327	1,129	1,888

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	10.0" Round Culvert L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	139.80'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.16 hrs HW=139.95' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

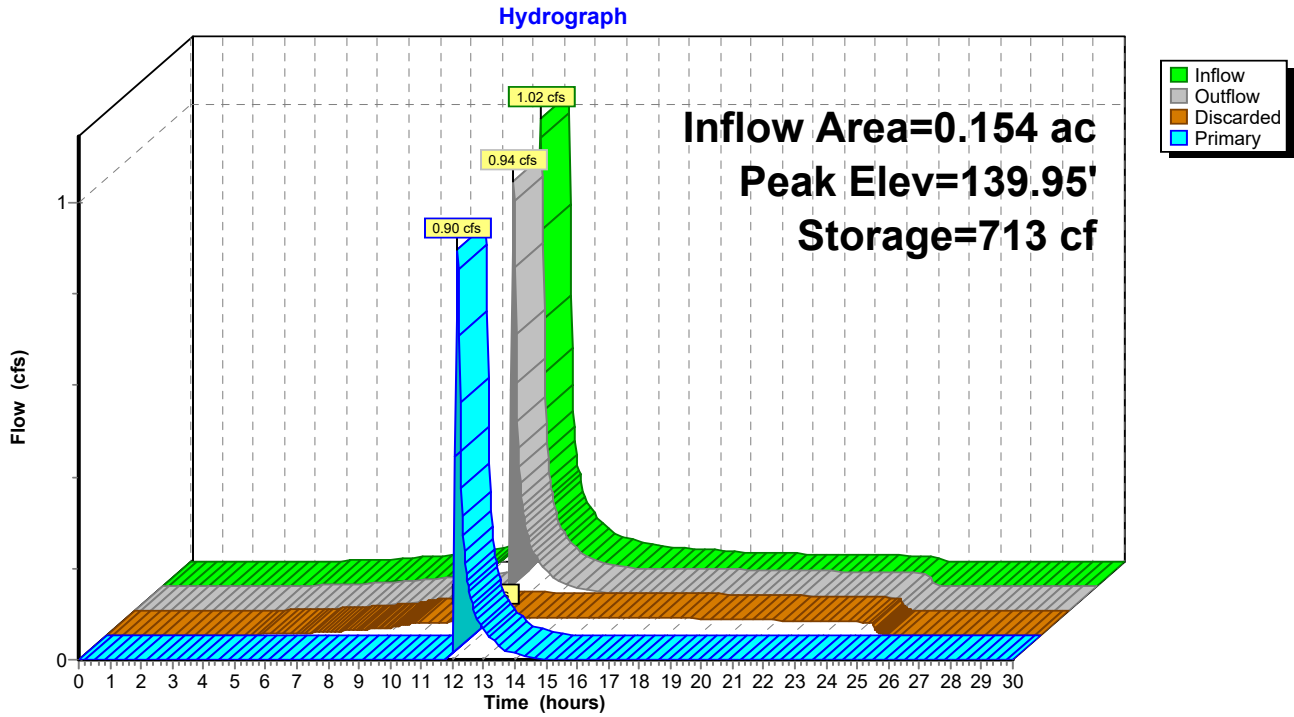
Primary OutFlow Max=0.88 cfs @ 12.16 hrs HW=139.95' (Free Discharge)
↑**1=Culvert** (Passes 0.88 cfs of 2.21 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.88 cfs @ 1.26 fps)

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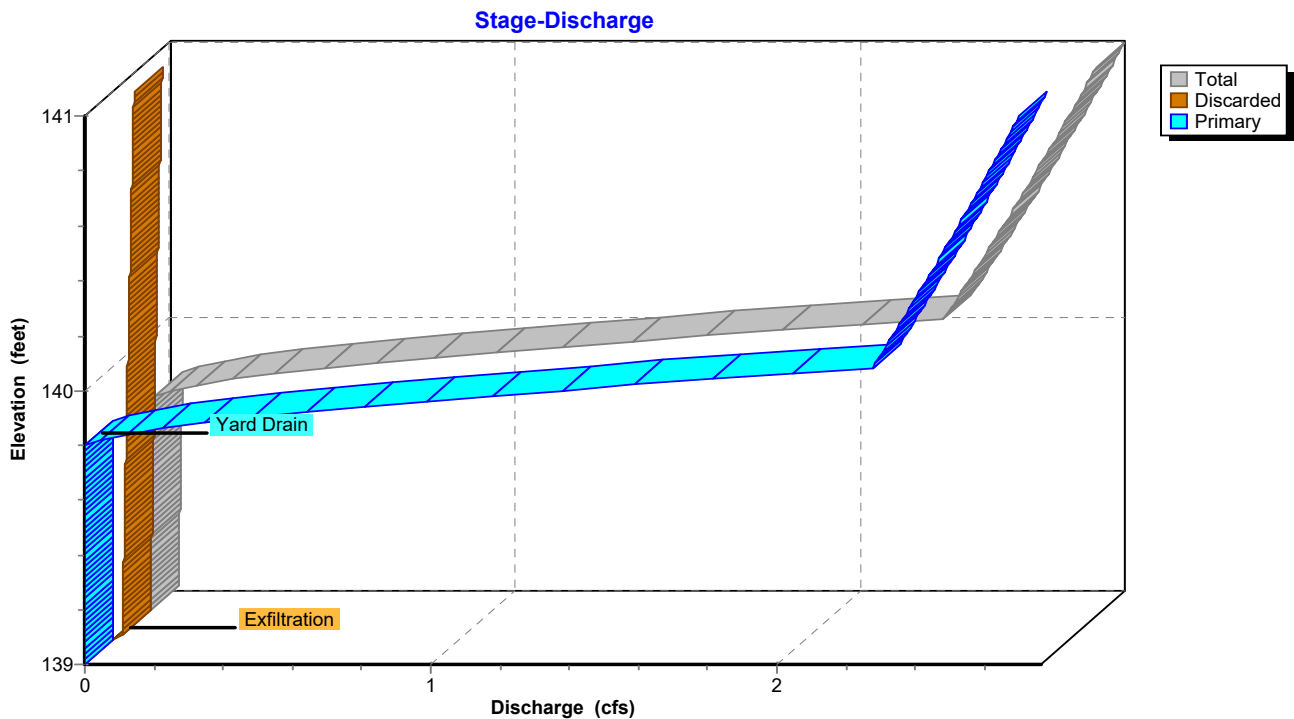
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Pond B-2: North Basin



Pond B-2: North Basin



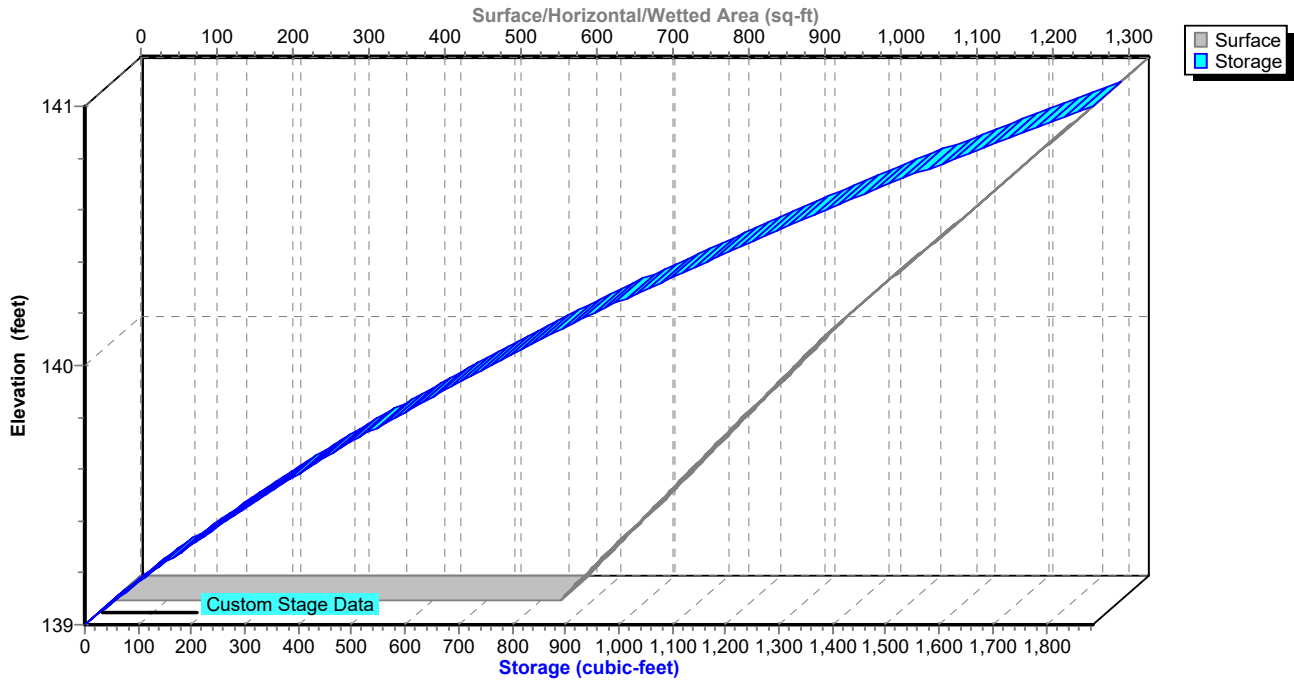
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Pond B-2: North Basin

Stage-Area-Storage



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Summary for Pond S-1: Subsurface Infiltration System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 2.74" for 50-yr event
Inflow = 1.86 cfs @ 12.21 hrs, Volume= 0.148 af
Outflow = 0.83 cfs @ 12.51 hrs, Volume= 0.148 af, Atten= 55%, Lag= 17.7 min
Discarded = 0.06 cfs @ 10.47 hrs, Volume= 0.082 af
Primary = 0.78 cfs @ 12.51 hrs, Volume= 0.066 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 145.65' @ 12.51 hrs Surf.Area= 0.029 ac Storage= 0.048 af

Plug-Flow detention time= 110.9 min calculated for 0.148 af (100% of inflow)
Center-of-Mass det. time= 110.9 min (875.3 - 764.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.10'	0.026 af	20.50'W x 60.58'L x 3.50'H Field A 0.100 af Overall - 0.034 af Embedded = 0.066 af x 40.0% Voids
#2A	143.60'	0.034 af	ADS_StormTech SC-740 +Cap x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	144.35'	15.0" Round Culvert L= 119.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.35' / 142.85' S= 0.0126 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	144.63'	4.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	146.00'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	143.10'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 10.47 hrs HW=143.14' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.78 cfs @ 12.51 hrs HW=145.65' (Free Discharge)
↑**1=Culvert** (Passes 0.78 cfs of 4.84 cfs potential flow)
↑**2=Orifice** (Orifice Controls 0.78 cfs @ 4.44 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-1: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af

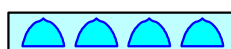
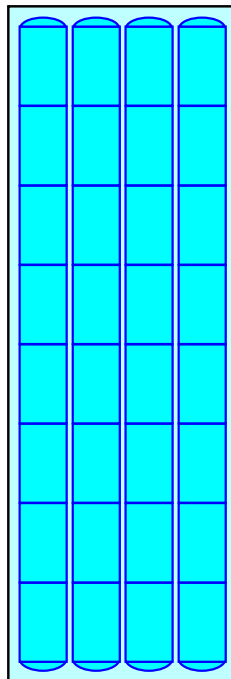
Overall Storage Efficiency = 60.3%

Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers

161.0 cy Field

106.5 cy Stone

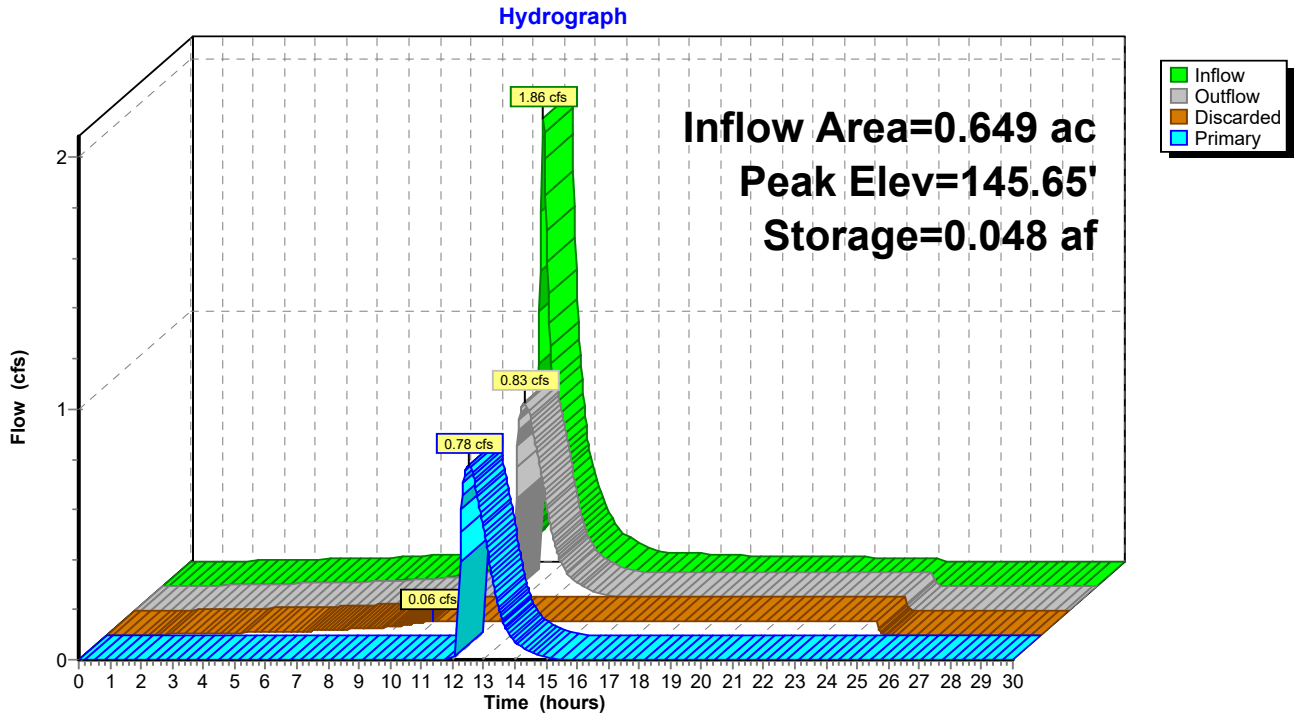


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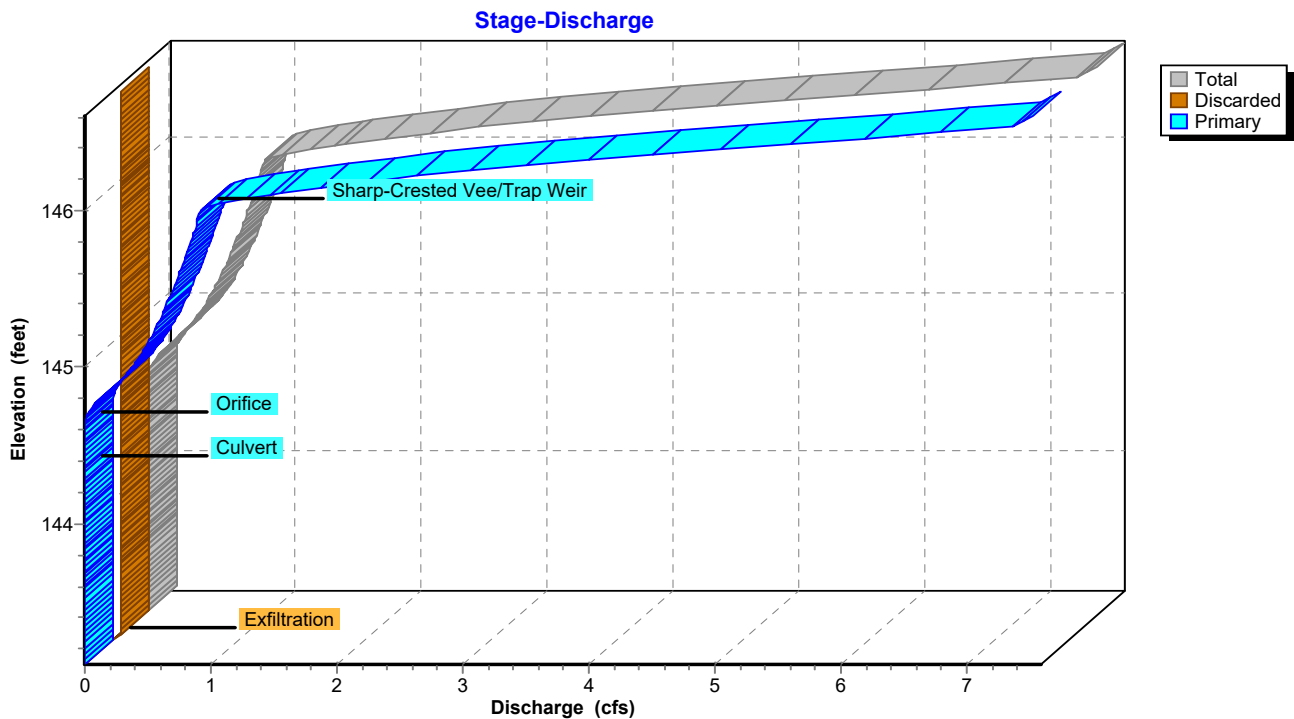
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Pond S-1: Subsurface Infiltration System



Pond S-1: Subsurface Infiltration System

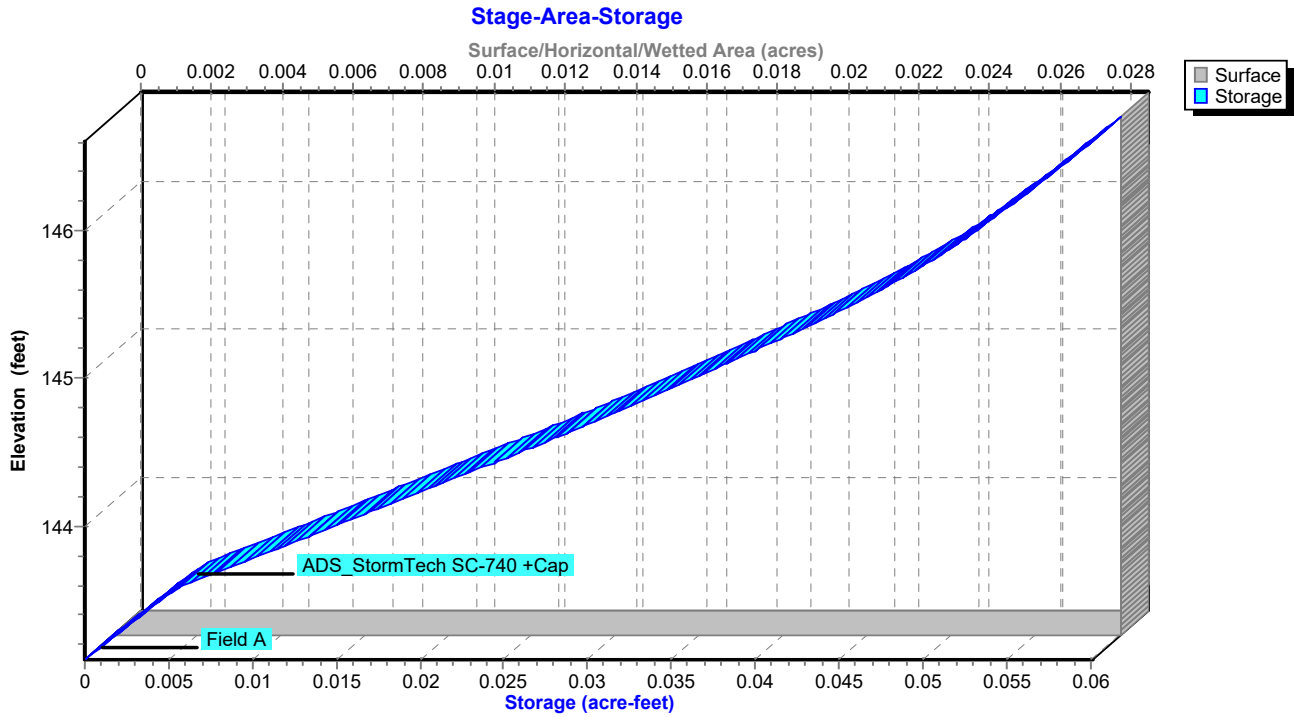


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Pond S-1: Subsurface Infiltration System



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Summary for Pond S-2: Subsurface Infiltration System

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 7.18" for 50-yr event
Inflow = 1.38 cfs @ 11.25 hrs, Volume= 1.100 af
Outflow = 1.31 cfs @ 17.91 hrs, Volume= 1.089 af, Atten= 5%, Lag= 399.9 min
Discarded = 0.12 cfs @ 2.28 hrs, Volume= 0.286 af
Primary = 1.19 cfs @ 17.91 hrs, Volume= 0.803 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 144.17' @ 17.91 hrs Surf.Area= 0.060 ac Storage= 0.107 af

Plug-Flow detention time= 91.6 min calculated for 1.089 af (99% of inflow)
Center-of-Mass det. time= 85.7 min (896.5 - 810.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	141.50'	0.054 af	25.25"W x 103.30"L x 3.50"H Field A 0.210 af Overall - 0.074 af Embedded = 0.136 af x 40.0% Voids
#2A	142.00'	0.074 af	ADS_StormTech SC-740 +Cap x 70 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 70 Chambers in 5 Rows
		0.128 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.04'	12.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.04' / 142.29' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	143.14'	5.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	144.40'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	141.50'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 2.28 hrs HW=141.54' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=1.19 cfs @ 17.91 hrs HW=144.17' (Free Discharge)
↑**1=Culvert** (Passes 1.19 cfs of 3.00 cfs potential flow)
↑**2=Orifice** (Orifice Controls 1.19 cfs @ 4.36 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-2: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

14 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 101.30' Row Length +12.0" End Stone x 2 = 103.30' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

70 Chambers x 45.9 cf = 3,215.8 cf Chamber Storage

9,128.8 cf Field - 3,215.8 cf Chambers = 5,913.0 cf Stone x 40.0% Voids = 2,365.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,581.0 cf = 0.128 af

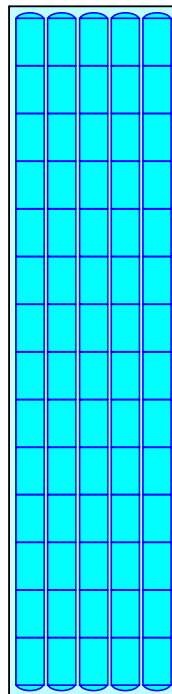
Overall Storage Efficiency = 61.1%

Overall System Size = 103.30' x 25.25' x 3.50'

70 Chambers

338.1 cy Field

219.0 cy Stone

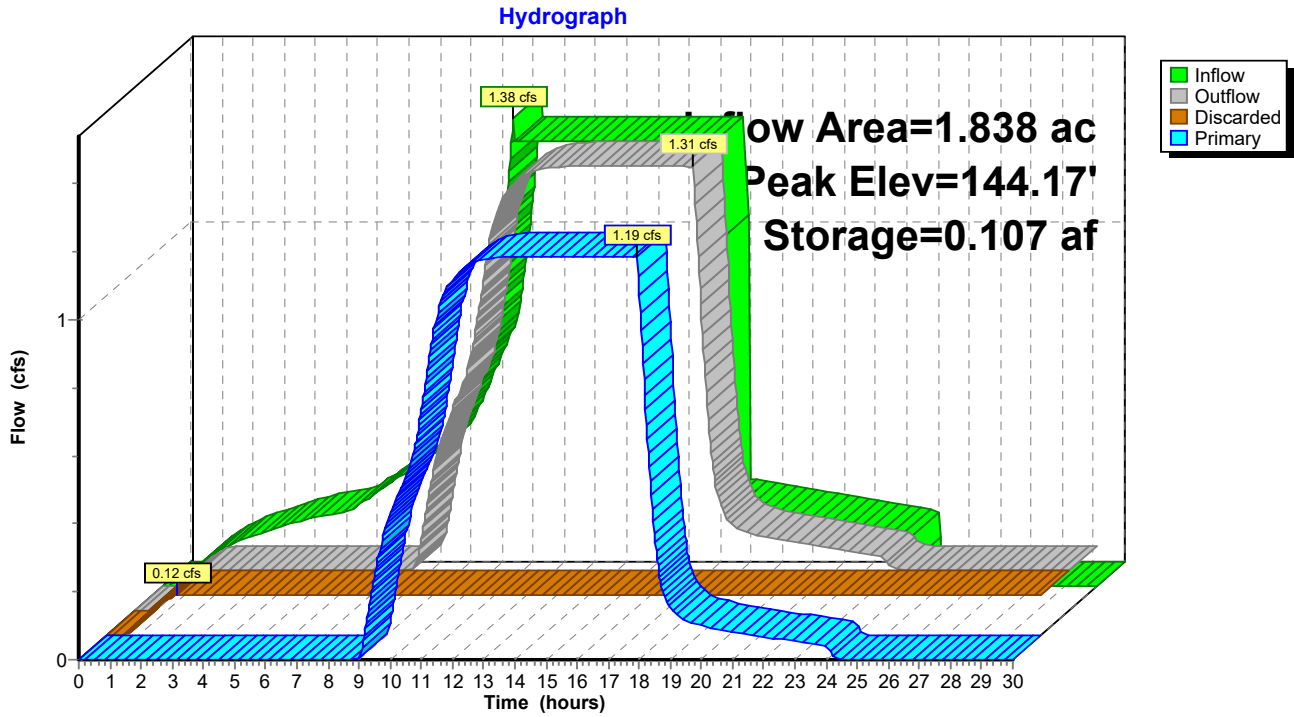


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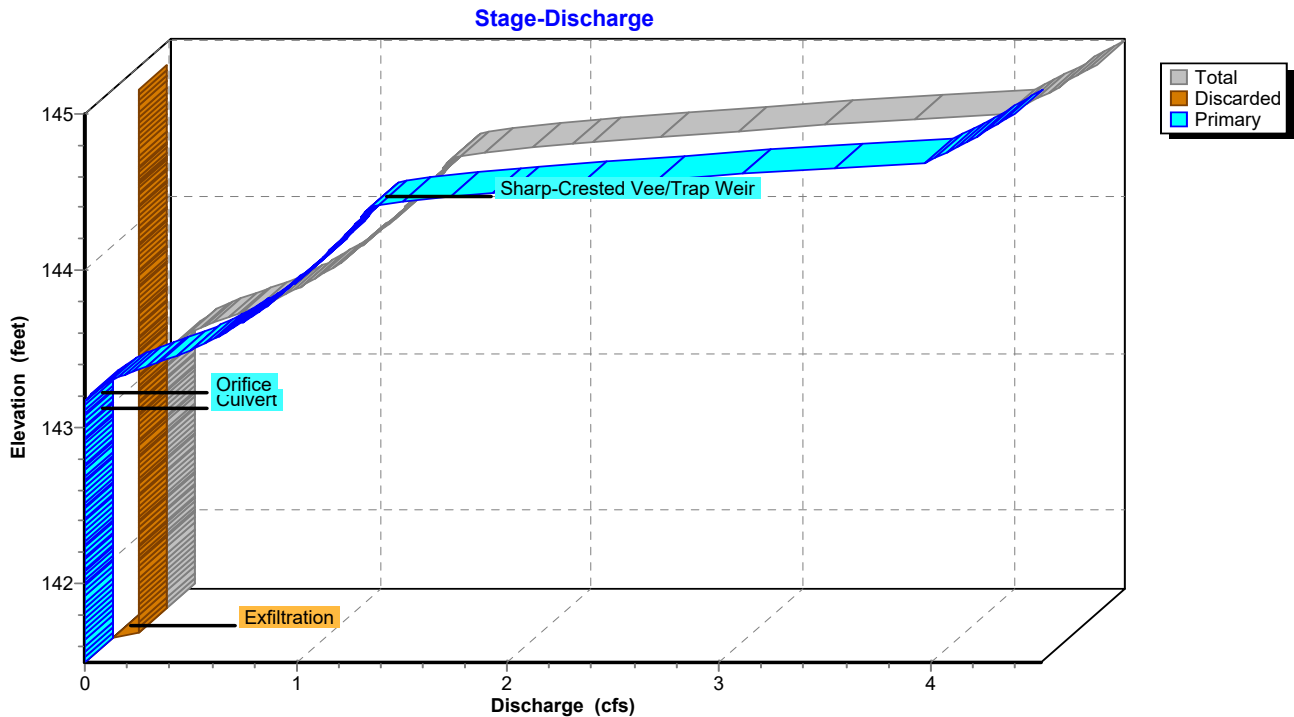
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Pond S-2: Subsurface Infiltration System



Pond S-2: Subsurface Infiltration System

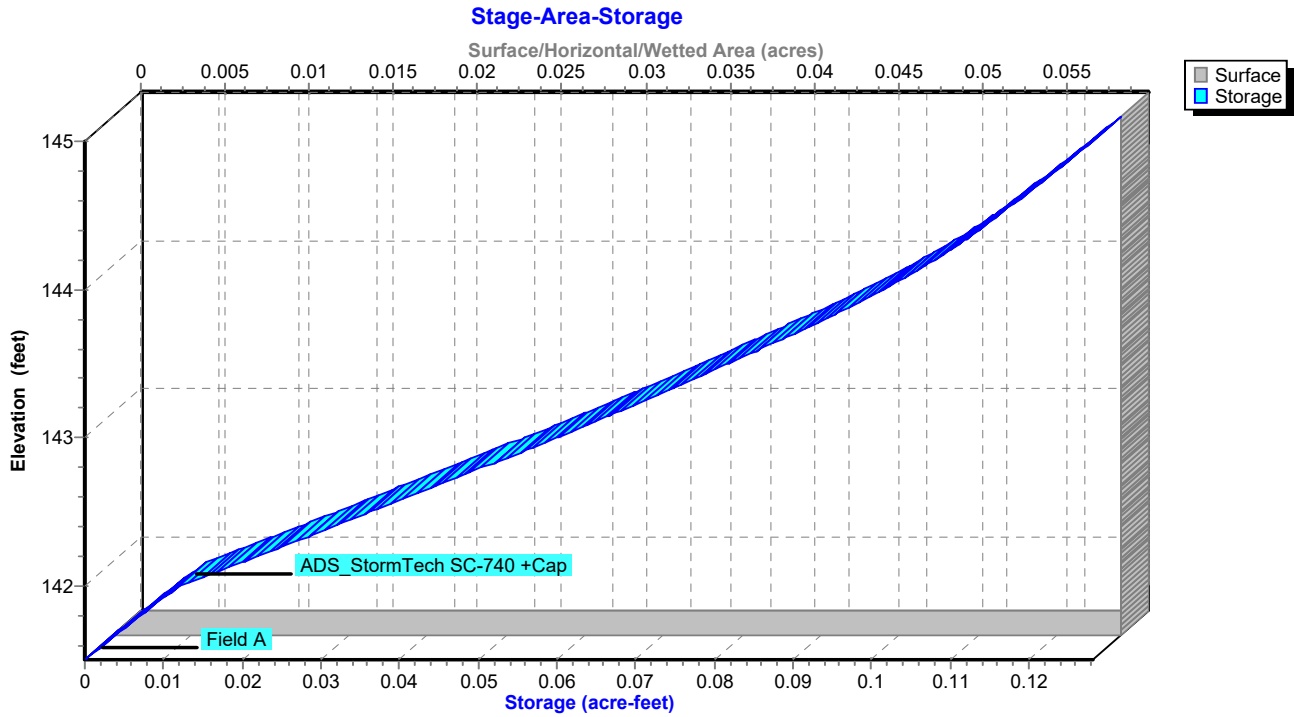


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Pond S-2: Subsurface Infiltration System



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Summary for Pond S-3: Subsurface Infiltration System

Inflow Area = 1.375 ac, 64.06% Impervious, Inflow Depth = 5.99" for 50-yr event
Inflow = 5.84 cfs @ 12.16 hrs, Volume= 0.686 af
Outflow = 4.66 cfs @ 12.40 hrs, Volume= 0.686 af, Atten= 20%, Lag= 14.2 min
Discarded = 0.16 cfs @ 7.80 hrs, Volume= 0.287 af
Primary = 4.50 cfs @ 12.40 hrs, Volume= 0.400 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.57' @ 12.40 hrs Surf.Area= 0.081 ac Storage= 0.140 af

Plug-Flow detention time= 67.7 min calculated for 0.686 af (100% of inflow)
Center-of-Mass det. time= 67.7 min (838.3 - 770.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	137.00'	0.073 af	25.25"W x 138.90"L x 3.50"H Field A 0.282 af Overall - 0.100 af Embedded = 0.182 af x 40.0% Voids
#2A	137.50'	0.100 af	ADS_StormTech SC-740 +Cap x 95 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56"L with 0.44' Overlap 95 Chambers in 5 Rows
		0.173 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	137.90'	18.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 137.90' / 137.53' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	137.92'	7.0" Vert. Orifice X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	139.90'	5.0' long Weir Wall Cv= 2.62 (C= 3.28)
#4	Discarded	137.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 7.80 hrs HW=137.04' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=4.49 cfs @ 12.40 hrs HW=139.57' (Free Discharge)
↑**1=Culvert** (Passes 4.49 cfs of 7.23 cfs potential flow)
↑**2=Orifice** (Orifice Controls 4.49 cfs @ 5.61 fps)
↑**3=Weir Wall** (Controls 0.00 cfs)

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Pond S-3: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

19 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 136.90' Row Length +12.0" End Stone x 2 = 138.90' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

95 Chambers x 45.9 cf = 4,364.3 cf Chamber Storage

12,275.0 cf Field - 4,364.3 cf Chambers = 7,910.7 cf Stone x 40.0% Voids = 3,164.3 cf Stone Storage

Chamber Storage + Stone Storage = 7,528.6 cf = 0.173 af

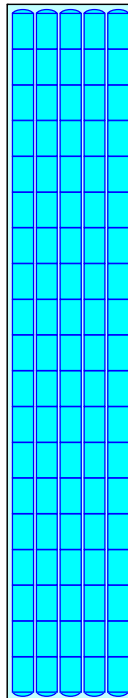
Overall Storage Efficiency = 61.3%

Overall System Size = 138.90' x 25.25' x 3.50'

95 Chambers

454.6 cy Field

293.0 cy Stone

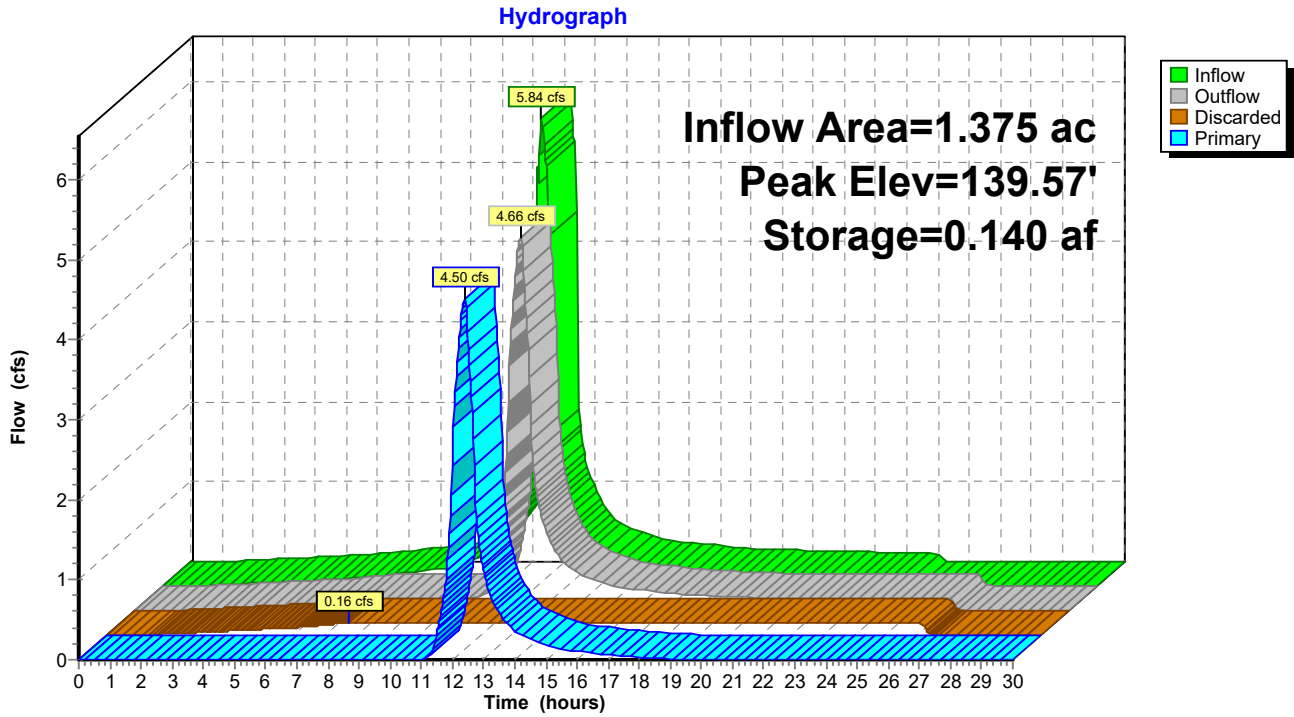


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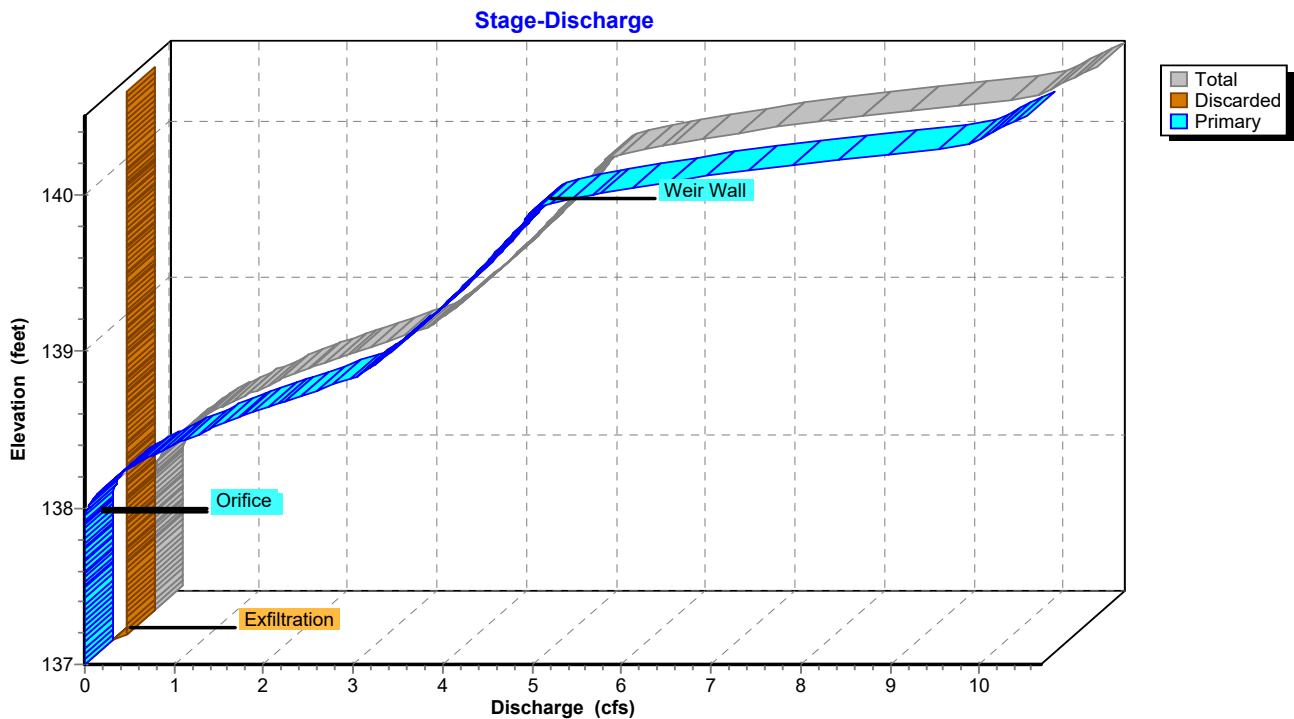
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Pond S-3: Subsurface Infiltration System



Pond S-3: Subsurface Infiltration System

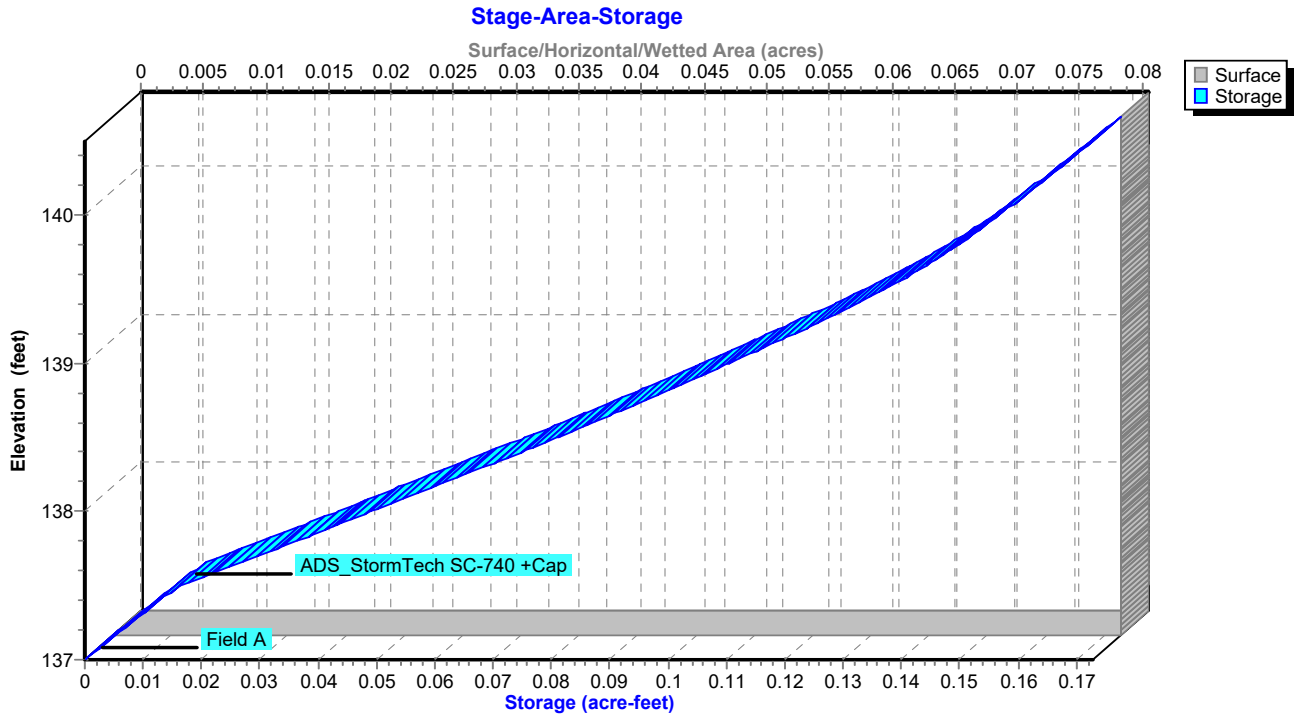


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Pond S-3: Subsurface Infiltration System



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Summary for Subcatchment PR-1: CCB 14

Runoff = 0.41 cfs @ 12.13 hrs, Volume= 0.032 af, Depth= 7.99"
Routed to Reach R2 : Site Stormwater System

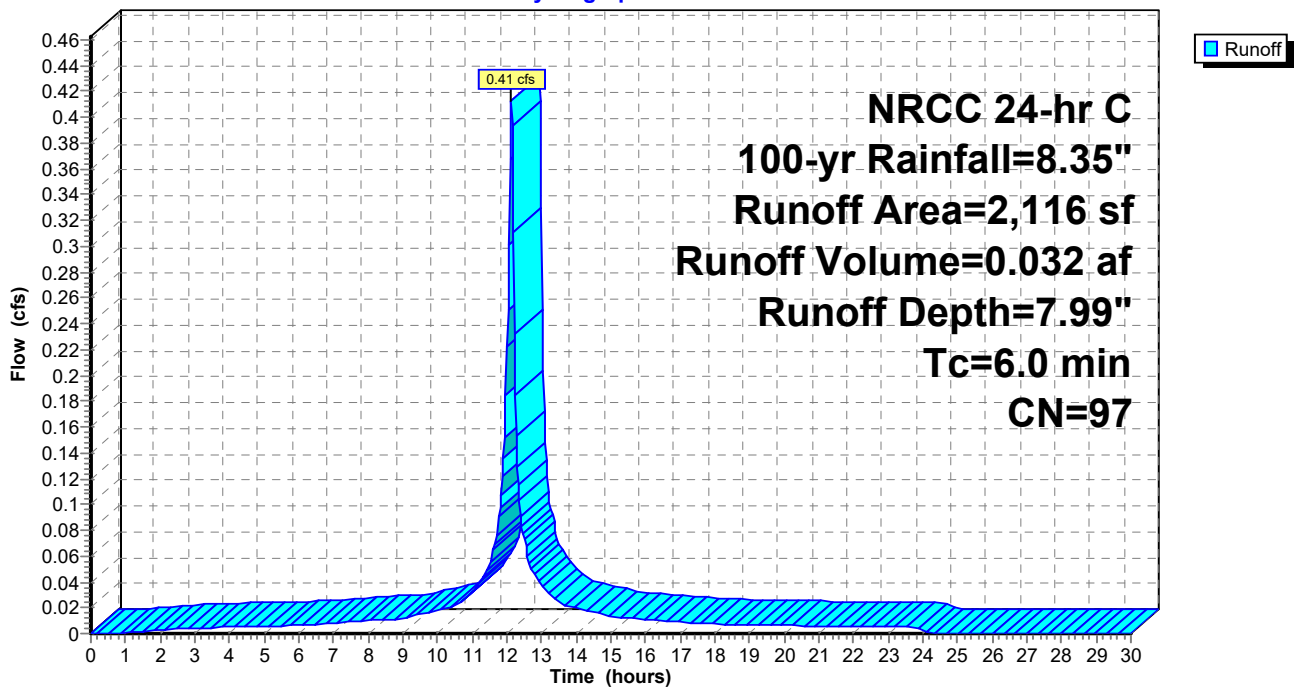
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
2,045	98	Paved parking, HSG D
* 71	79	Landscaping, Good, HSG D
2,116	97	Weighted Average
71		3.36% Pervious Area
2,045		96.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-1: CCB 14

Hydrograph



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Summary for Subcatchment PR-10: CCB 28

Runoff = 1.76 cfs @ 12.13 hrs, Volume= 0.135 af, Depth= 7.75"
Routed to Reach R2 : Site Stormwater System

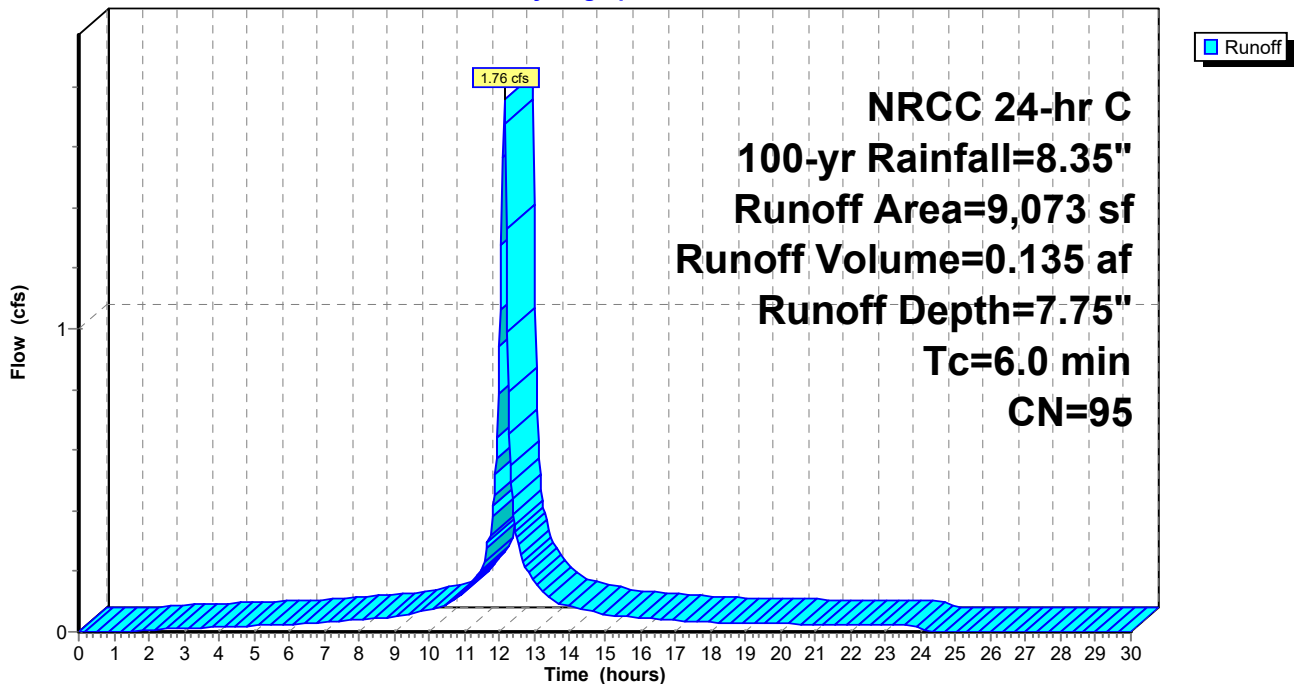
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
7,450	98	Paved parking, HSG D
440	80	>75% Grass cover, Good, HSG D
* 1,183	79	Landscaping, Good, HSG D
9,073	95	Weighted Average
1,623		17.89% Pervious Area
7,450		82.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-10: CCB 28

Hydrograph



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Summary for Subcatchment PR-11: Building Roof

Runoff = 15.67 cfs @ 12.13 hrs, Volume= 1.242 af, Depth= 8.11"
Routed to Reach R1 : Roof Leader

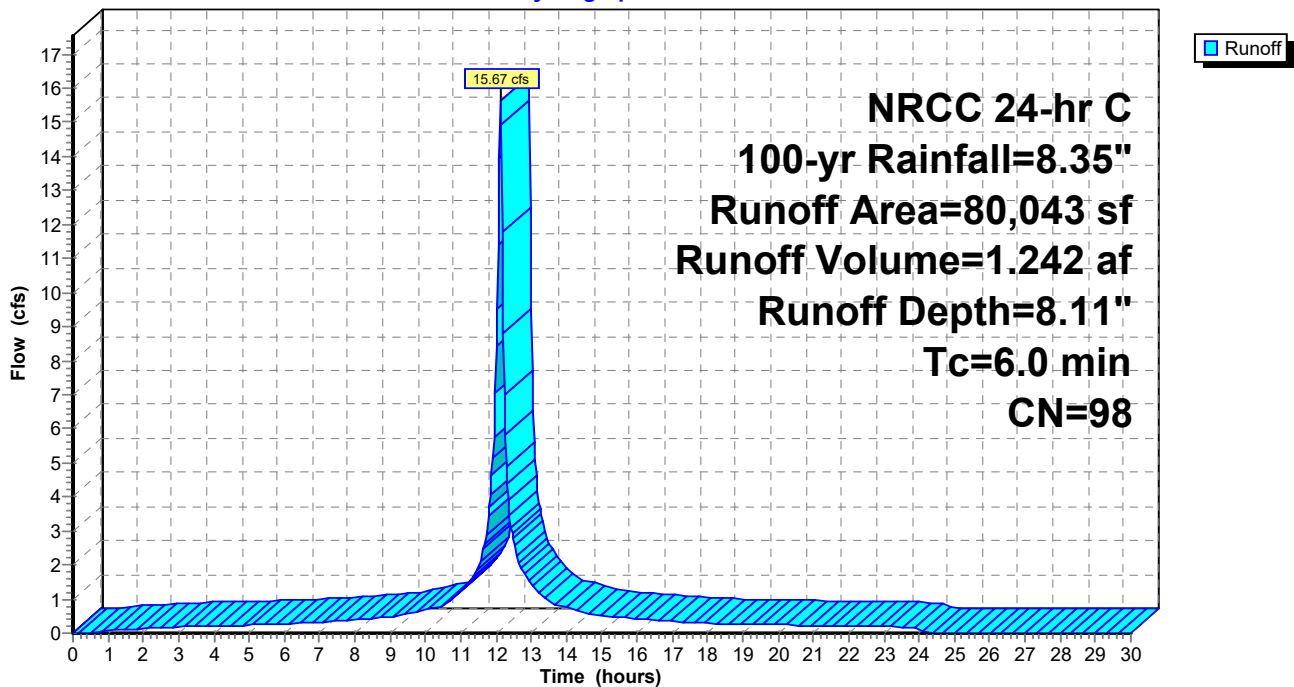
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
80,043	98	Roofs, HSG D
80,043		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-11: Building Roof

Hydrograph



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Summary for Subcatchment PR-12: CCB 29

Runoff = 0.19 cfs @ 12.13 hrs, Volume= 0.015 af, Depth= 8.11"
Routed to Reach R2 : Site Stormwater System

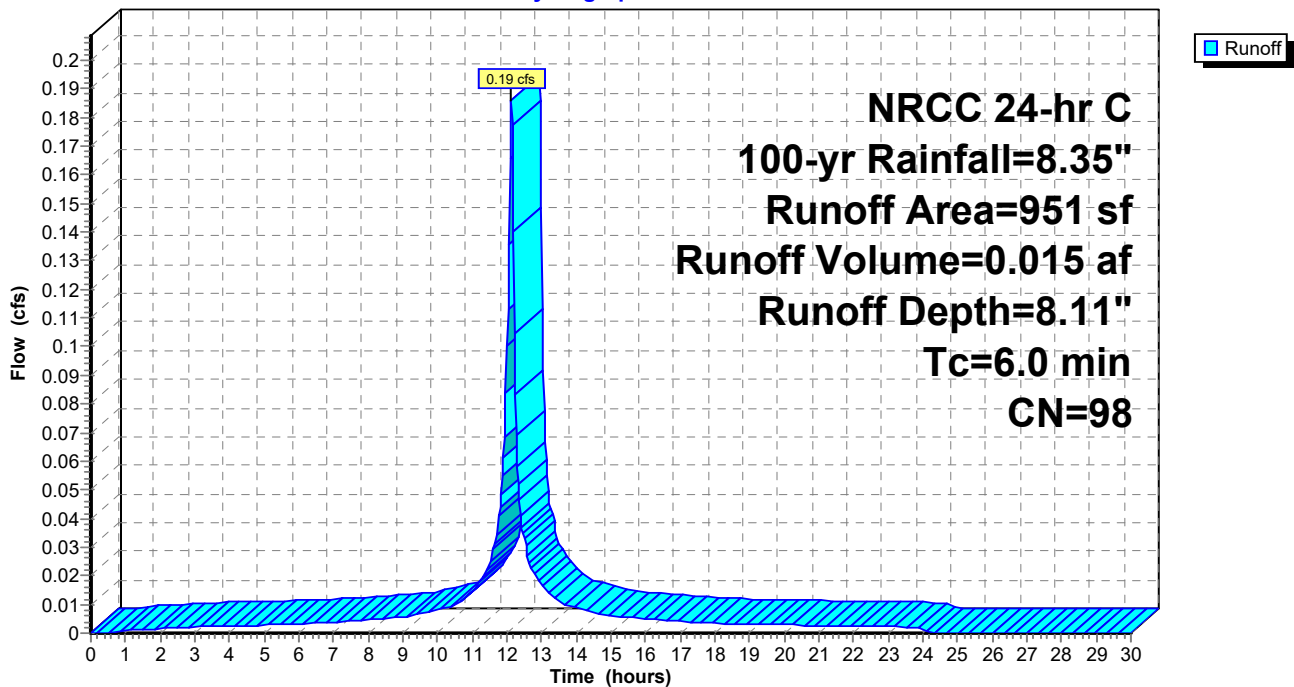
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
951	98	Paved parking, HSG D
951		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-12: CCB 29

Hydrograph



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Summary for Subcatchment PR-13: CCB 30

Runoff = 0.19 cfs @ 12.13 hrs, Volume= 0.015 af, Depth= 8.11"
Routed to Reach R2 : Site Stormwater System

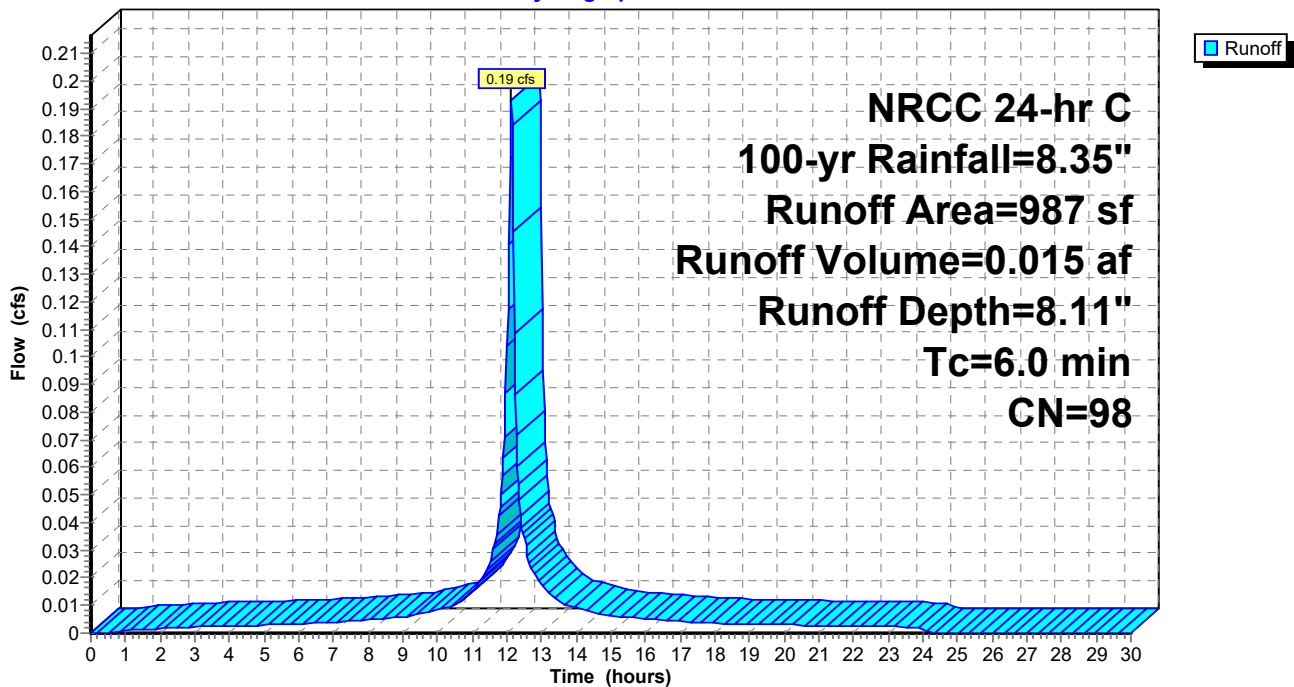
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
987	98	Paved parking, HSG D
987		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-13: CCB 30

Hydrograph



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Summary for Subcatchment PR-14: CLCB-10

Runoff = 0.34 cfs @ 12.13 hrs, Volume= 0.026 af, Depth= 7.87"
Routed to Reach R3 : East Stormwater System

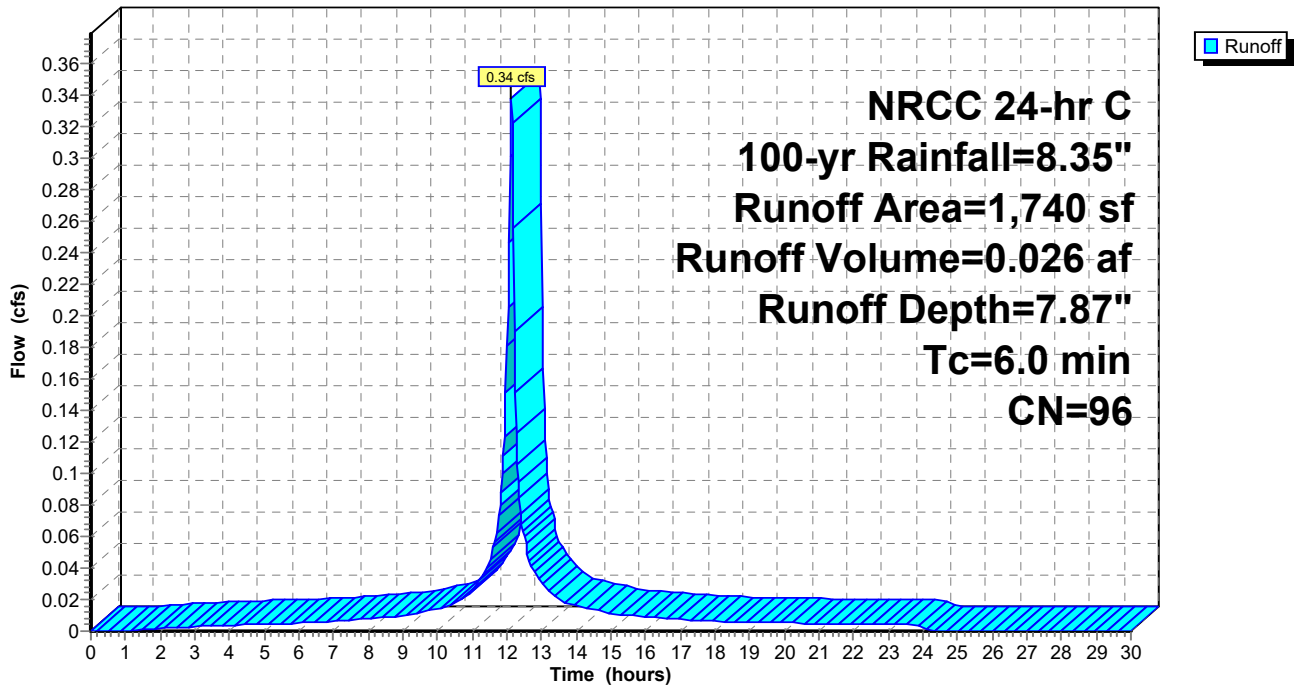
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
* 1,740	96	Concrete paver, HSG D
1,740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-14: CLCB-10

Hydrograph



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Summary for Subcatchment PR-15: CLCB-09

Runoff = 0.34 cfs @ 12.13 hrs, Volume= 0.026 af, Depth= 7.87"
Routed to Reach R3 : East Stormwater System

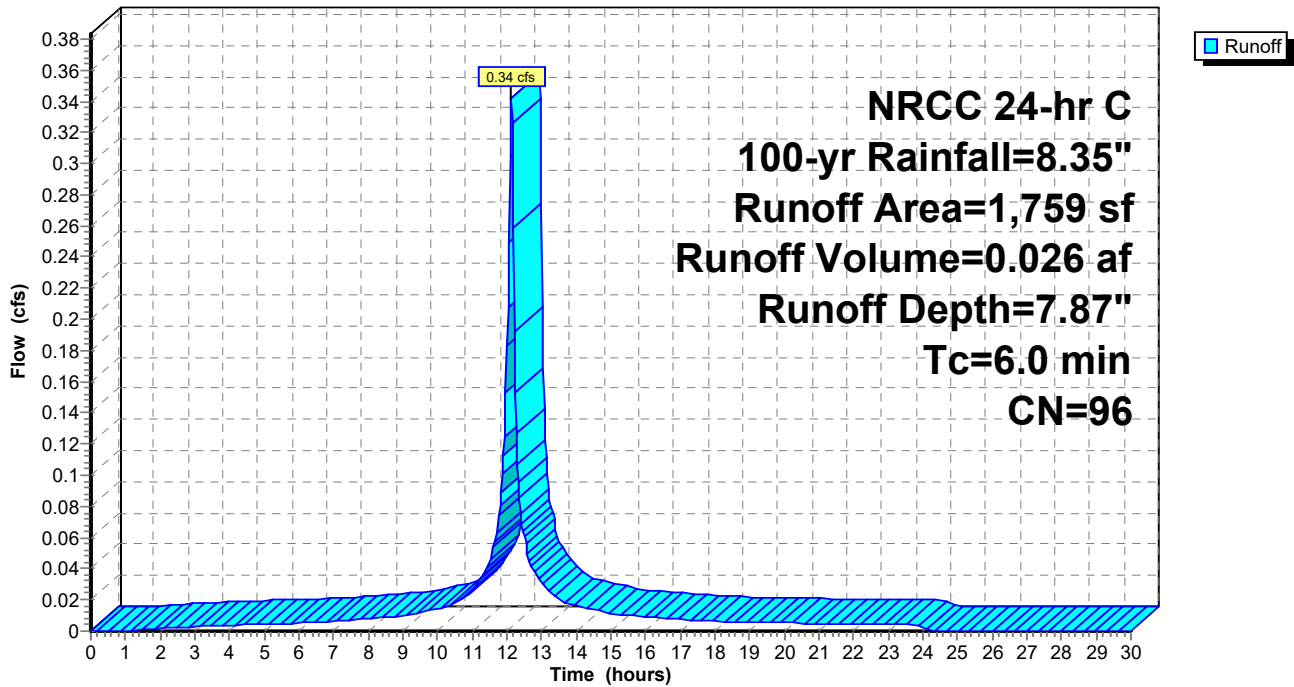
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
* 1,759	96	Pevious paver, HSG D
1,759		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-15: CLCB-09

Hydrograph



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Summary for Subcatchment PR-16: East rooftop

Runoff = 0.63 cfs @ 12.13 hrs, Volume= 0.050 af, Depth= 8.11"
Routed to Pond AP-2 : Front Lawn Rain Garden

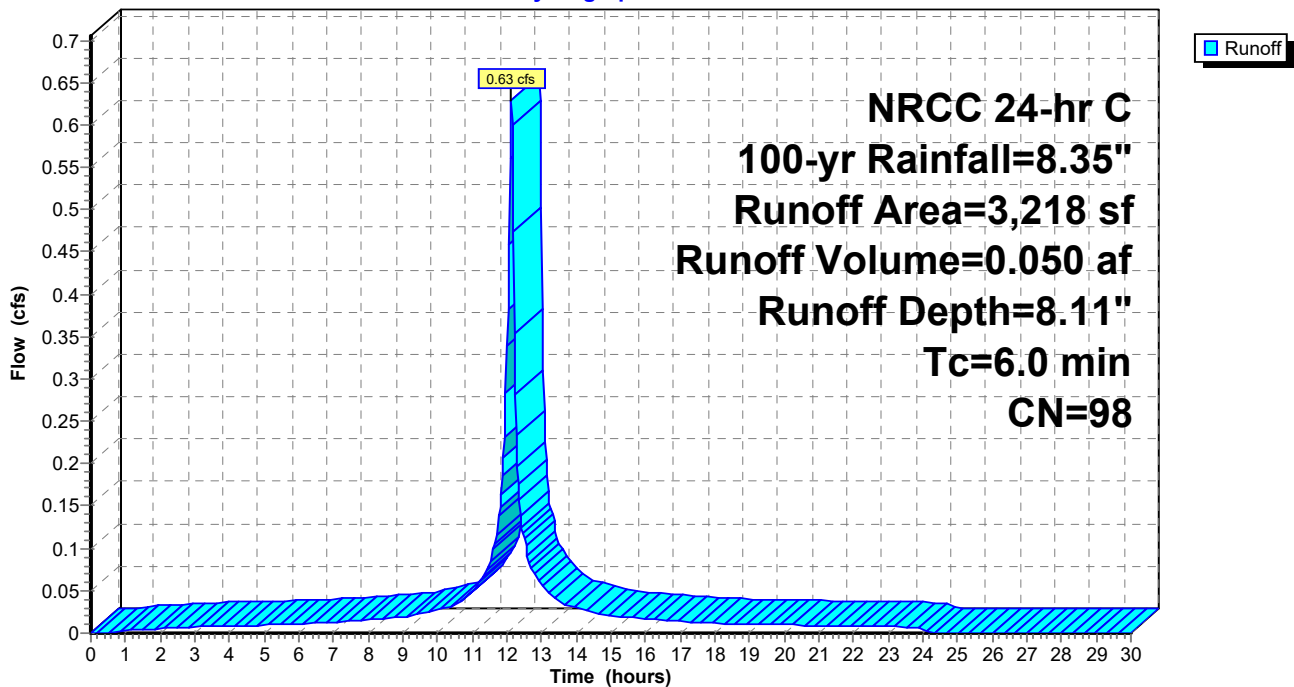
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
3,218	98	Roofs, HSG D
3,218		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-16: East rooftop

Hydrograph



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Summary for Subcatchment PR-17: Front Lawn

Runoff = 2.94 cfs @ 12.13 hrs, Volume= 0.203 af, Depth= 6.07"
 Routed to Pond AP-2 : Front Lawn Rain Garden

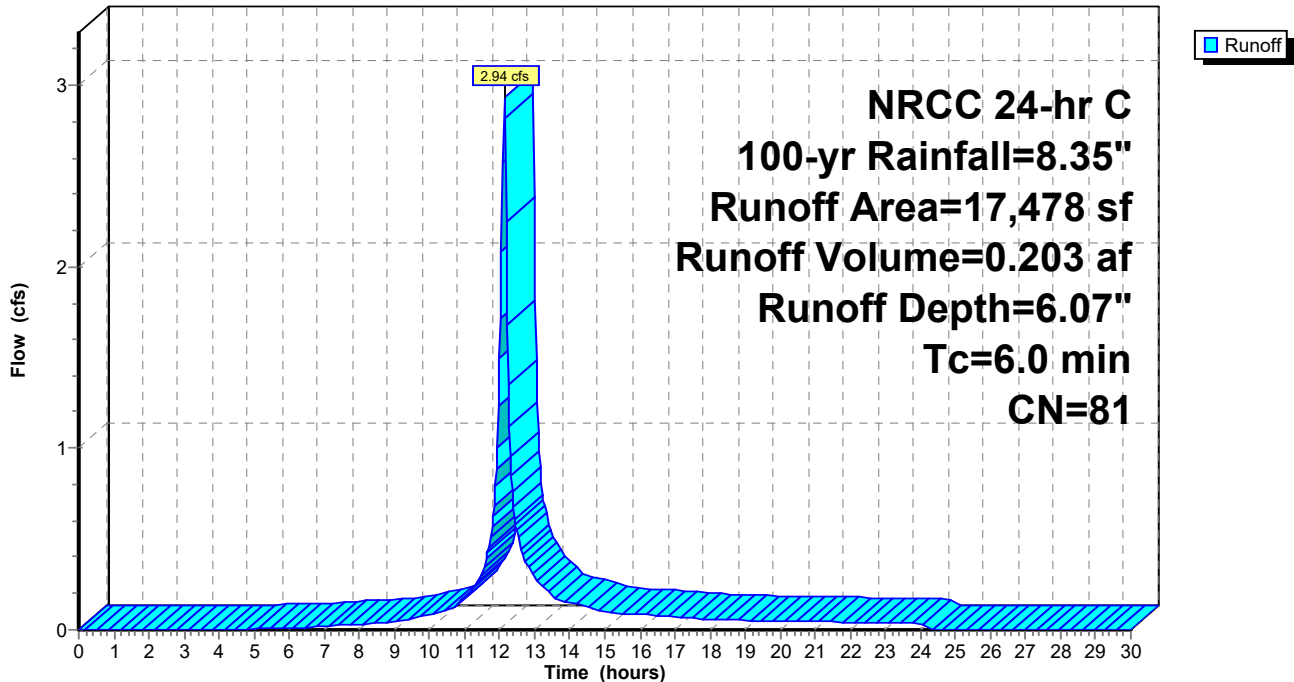
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
1,883	98	Paved parking, HSG D
6,950	80	>75% Grass cover, Good, HSG D
* 8,645	79	Landscaping, Good, HSG D
17,478	81	Weighted Average
15,595		89.23% Pervious Area
1,883		10.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-17: Front Lawn

Hydrograph



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Summary for Subcatchment PR-18: CCB-08

Runoff = 0.55 cfs @ 12.13 hrs, Volume= 0.040 af, Depth= 6.91"
Routed to Reach R3 : East Stormwater System

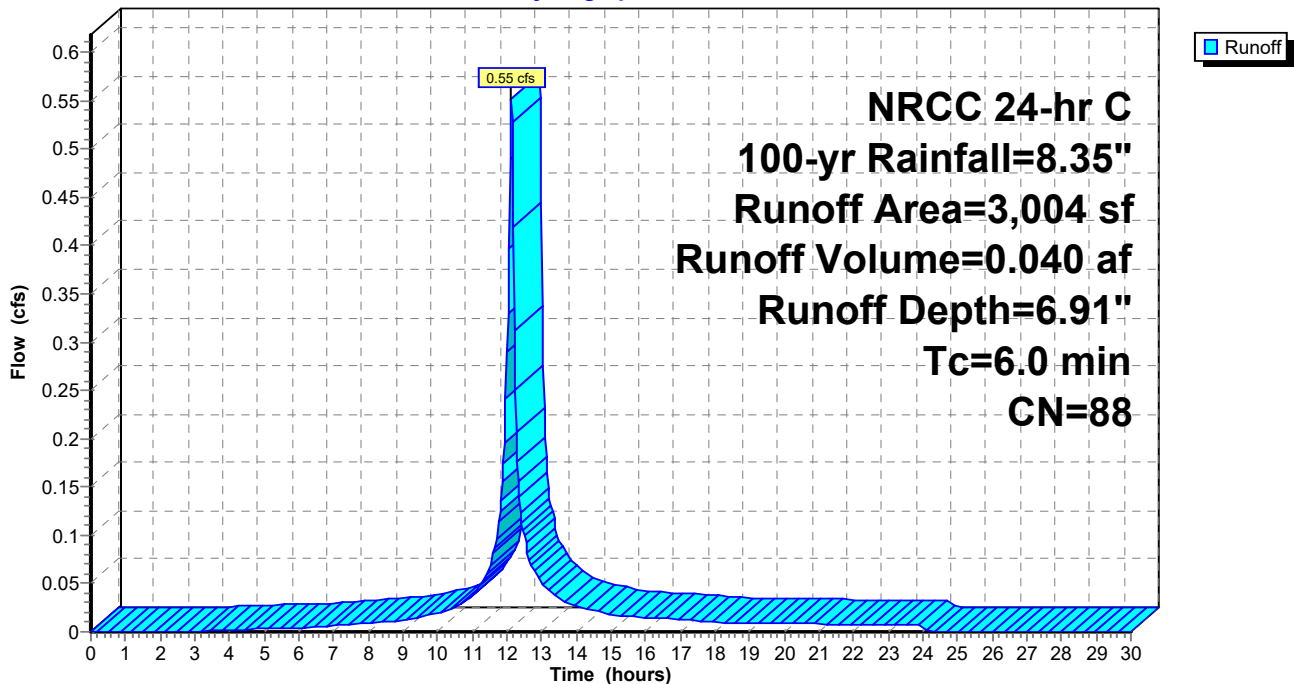
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
1,482	98	Paved parking, HSG D
192	80	>75% Grass cover, Good, HSG D
* 1,330	79	Landscaping, Good, HSG D
3,004	88	Weighted Average
1,522		50.67% Pervious Area
1,482		49.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-18: CCB-08

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Summary for Subcatchment PR-19: CCB-07

Runoff = 0.21 cfs @ 12.13 hrs, Volume= 0.017 af, Depth= 8.11"
Routed to Reach R3 : East Stormwater System

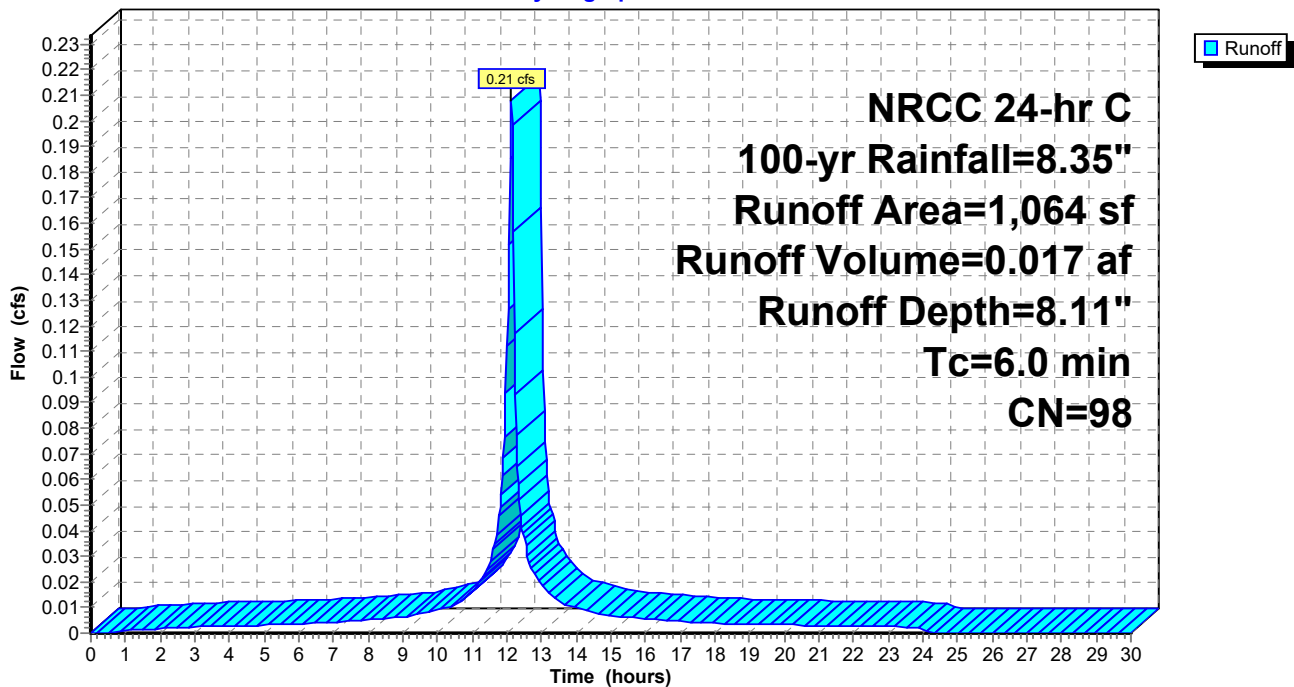
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
1,064	98	Paved parking, HSG D
1,064		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-19: CCB-07

Hydrograph



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Proposed Conditions
 NRCC 24-hr C 100-yr Rainfall=8.35"
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Summary for Subcatchment PR-2: CCB 10

Runoff = 1.69 cfs @ 12.13 hrs, Volume= 0.126 af, Depth= 7.39"
 Routed to Reach R2 : Site Stormwater System

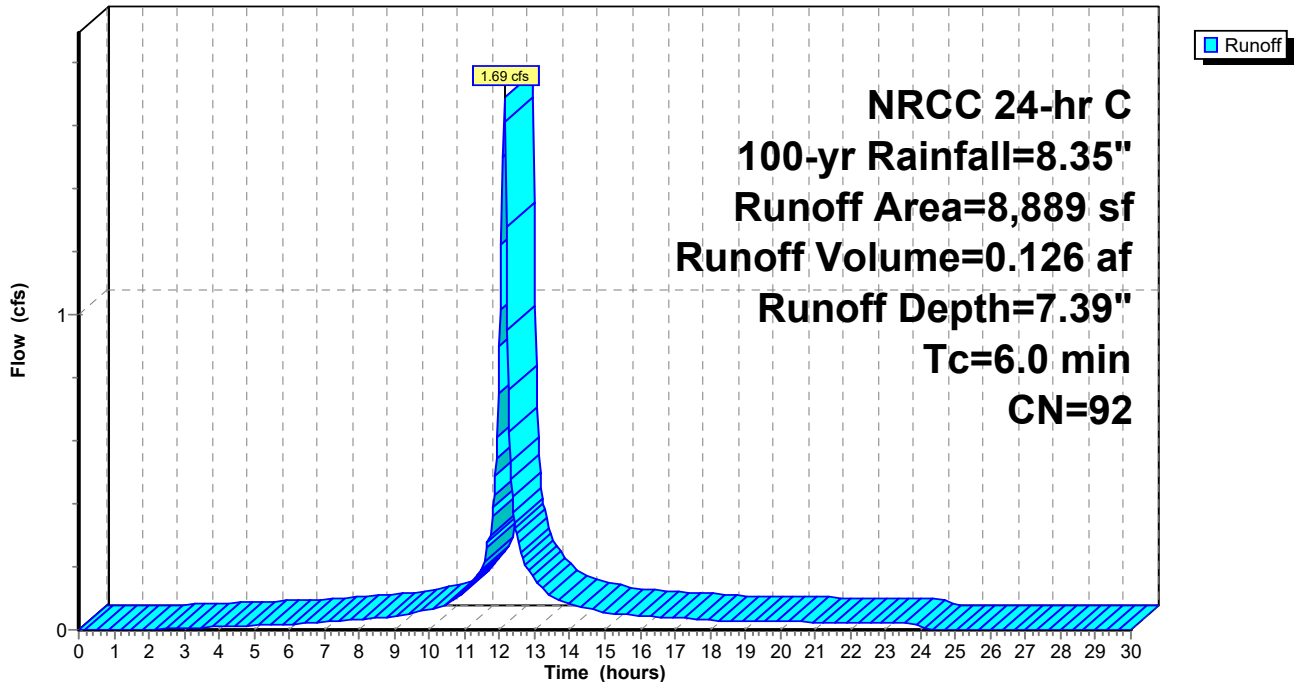
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 100-yr Rainfall=8.35"

	Area (sf)	CN	Description
*	6,733	98	Paved parking, HSG C
*	1,772	72	Landscaping, Good, HSG C
	384	74	>75% Grass cover, Good, HSG C
	8,889	92	Weighted Average
	2,156		24.25% Pervious Area
	6,733		75.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-2: CCB 10

Hydrograph



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Summary for Subcatchment PR-20: South of entrance drive

Runoff = 1.04 cfs @ 12.13 hrs, Volume= 0.071 af, Depth= 5.83"
Routed to Pond AP-4 : Landscaped Area

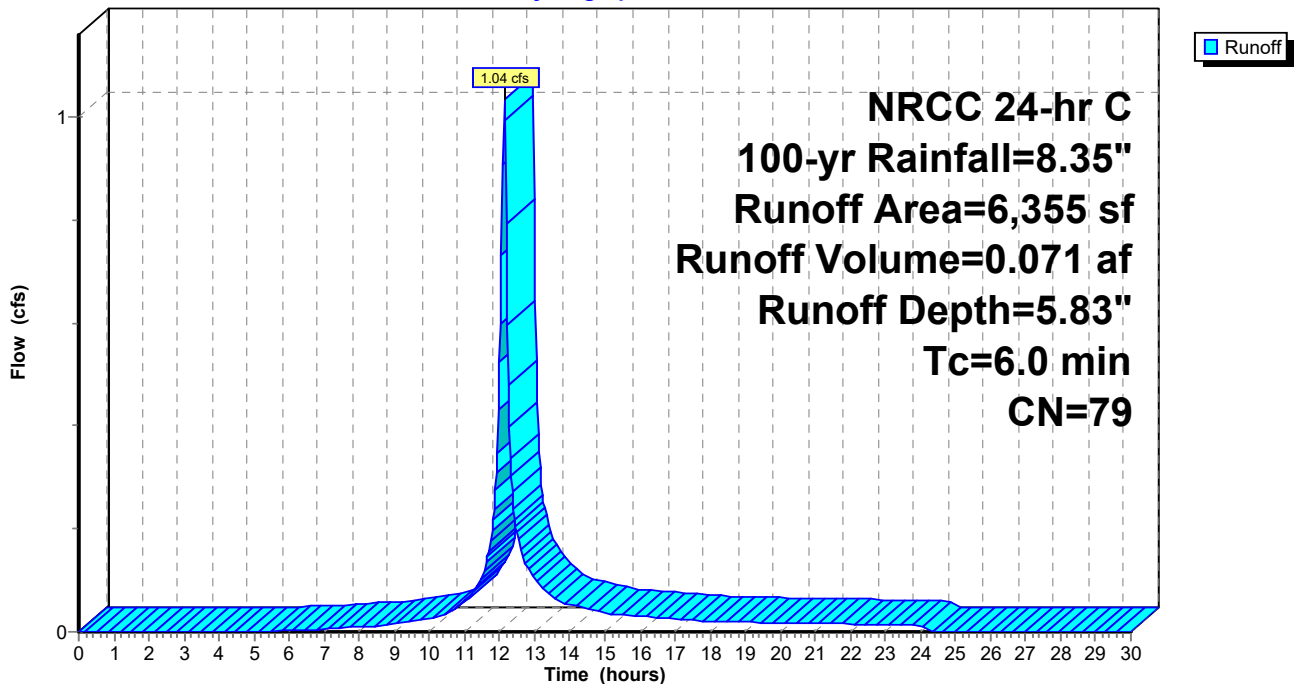
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
93	98	Paved parking, HSG D
755	80	>75% Grass cover, Good, HSG D
* 5,507	79	Landscaping, Good, HSG D
6,355	79	Weighted Average
6,262		98.54% Pervious Area
93		1.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-20: South of entrance drive

Hydrograph



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Summary for Subcatchment PR-21: Danbury Rd

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 0.018 af, Depth= 8.11"
Routed to Pond AP-3 : Danbury Road

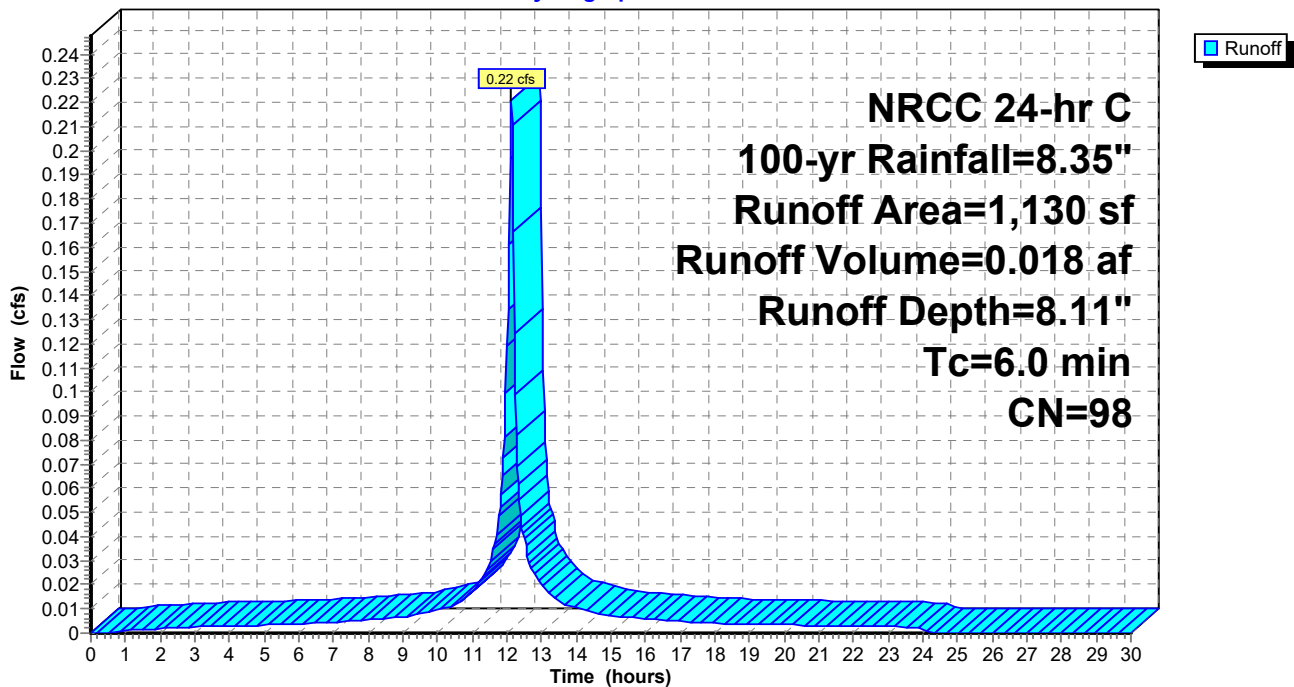
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
1,130	98	Paved parking, HSG D
1,130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-21: Danbury Rd

Hydrograph



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Summary for Subcatchment PR-3: CCB 07

Runoff = 1.00 cfs @ 12.13 hrs, Volume= 0.077 af, Depth= 7.87"
Routed to Reach R2 : Site Stormwater System

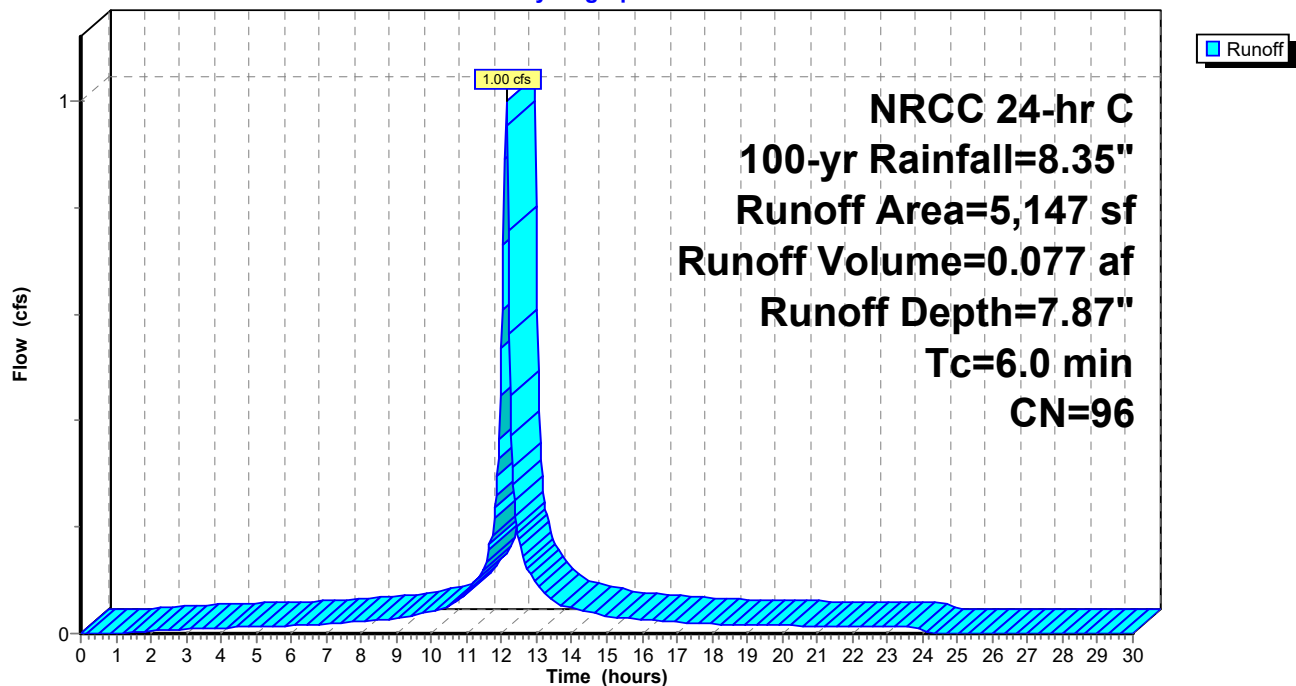
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

	Area (sf)	CN	Description
*	4,715	98	Paved parking, HSG C
*	432	72	Landscaping, Good, HSG C
	5,147	96	Weighted Average
	432		8.39% Pervious Area
	4,715		91.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-3: CCB 07

Hydrograph



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Summary for Subcatchment PR-4: CCB 06

Runoff = 0.41 cfs @ 12.13 hrs, Volume= 0.032 af, Depth= 7.99"
Routed to Reach R2 : Site Stormwater System

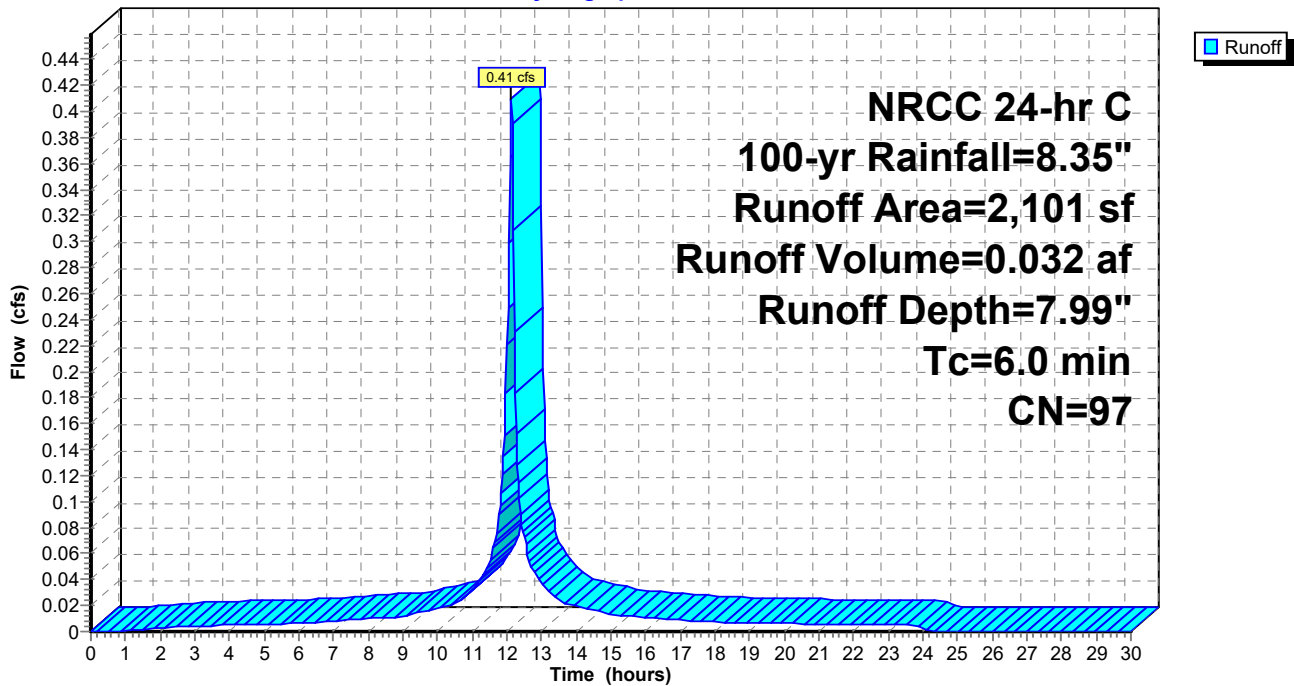
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
2,026	98	Paved parking, HSG D
* 75	79	Landscaping, Good, HSG D
2,101	97	Weighted Average
75		3.57% Pervious Area
2,026		96.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assigned minimum

Subcatchment PR-4: CCB 06

Hydrograph



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Summary for Subcatchment PR-5: South Basin

Runoff = 0.87 cfs @ 12.13 hrs, Volume= 0.061 af, Depth= 6.31"
Routed to Pond B-1 : South Basin

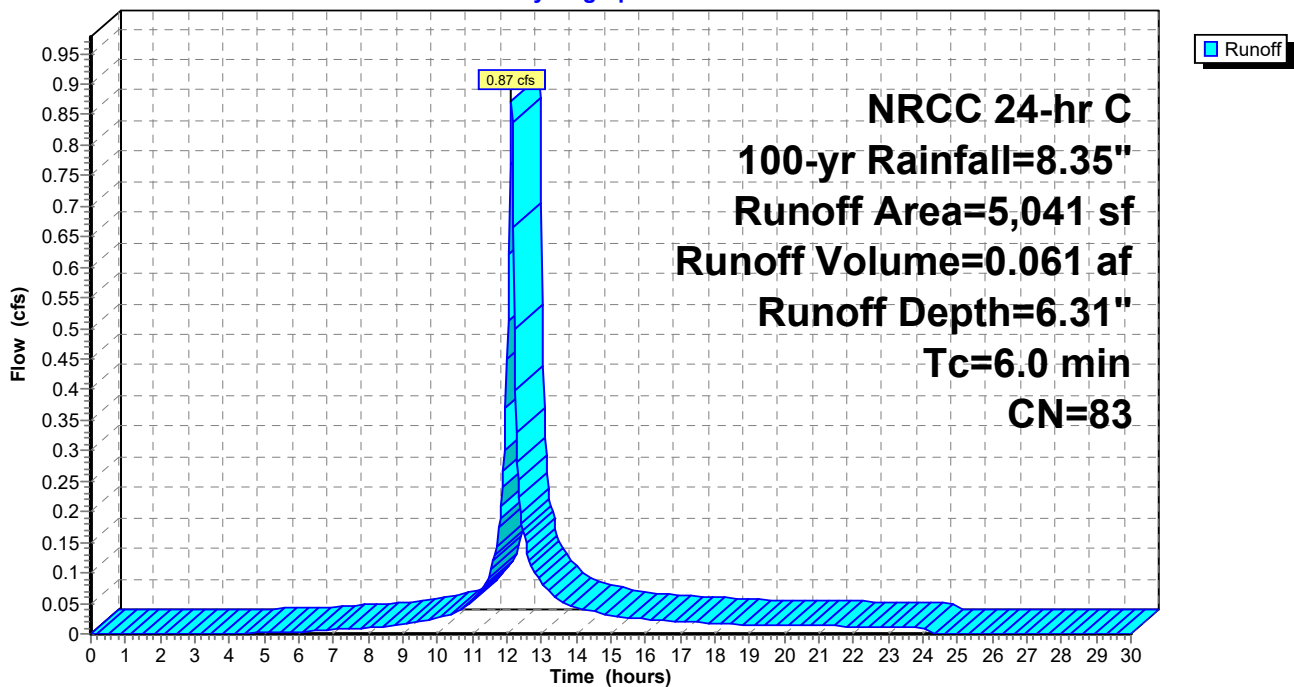
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

	Area (sf)	CN	Description
*	595	96	Permeable Paver, HSG C
*	366	96	Gravel surface, HSG C
*	2,205	72	Landscaping, Good, HSG C
*	890	98	Paved parking, HSG C
	985	80	>75% Grass cover, Good, HSG D
	5,041	83	Weighted Average
	4,151		82.34% Pervious Area
	890		17.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-5: South Basin

Hydrograph



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Summary for Subcatchment PR-6: West along river

Runoff = 3.33 cfs @ 12.13 hrs, Volume= 0.234 af, Depth= 6.43"
 Routed to Pond AP-1 : Norwalk River

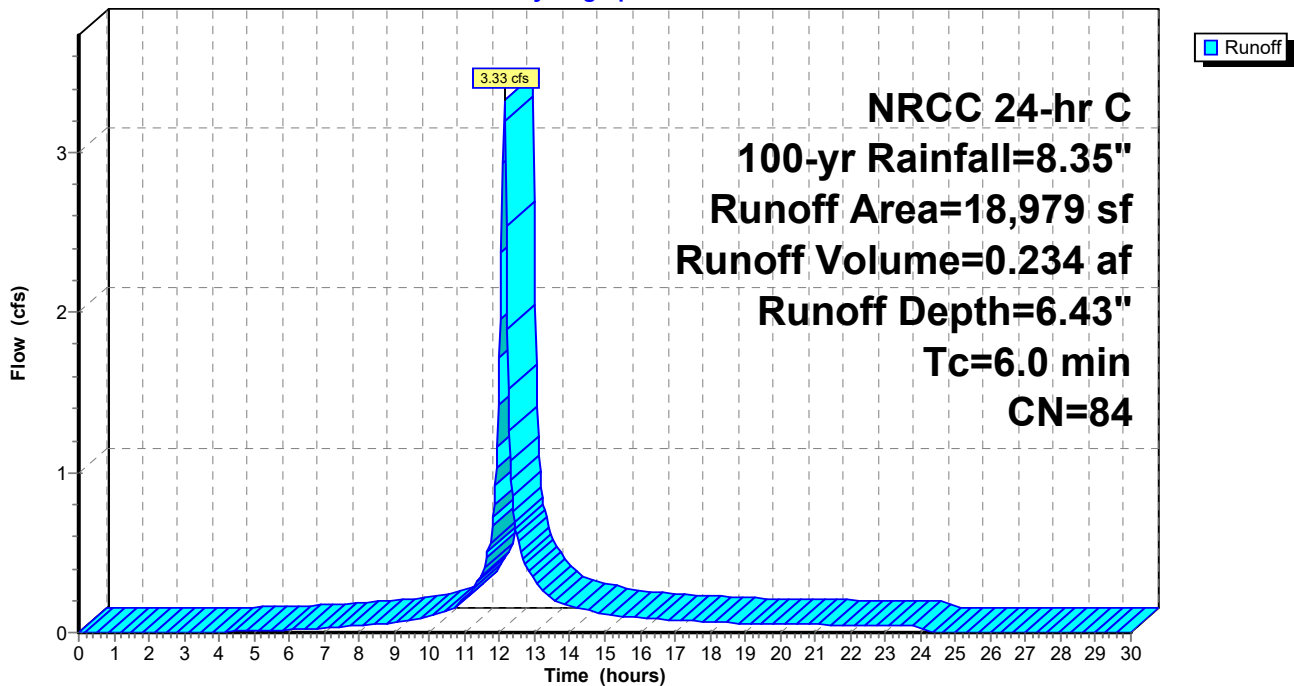
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
 NRCC 24-hr C 100-yr Rainfall=8.35"

	Area (sf)	CN	Description
*	4,195	96	Permeable paver, HSG D
	461	96	Gravel surface, HSG D
	911	98	Paved parking, HSG D
	2,775	80	>75% Grass cover, Good, HSG D
*	6,489	79	Landscaping, Good, HSG D
	4,148	77	Woods, Good, HSG D
	18,979	84	Weighted Average
	18,068		95.20% Pervious Area
	911		4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-6: West along river

Hydrograph



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Summary for Subcatchment PR-7: North basin

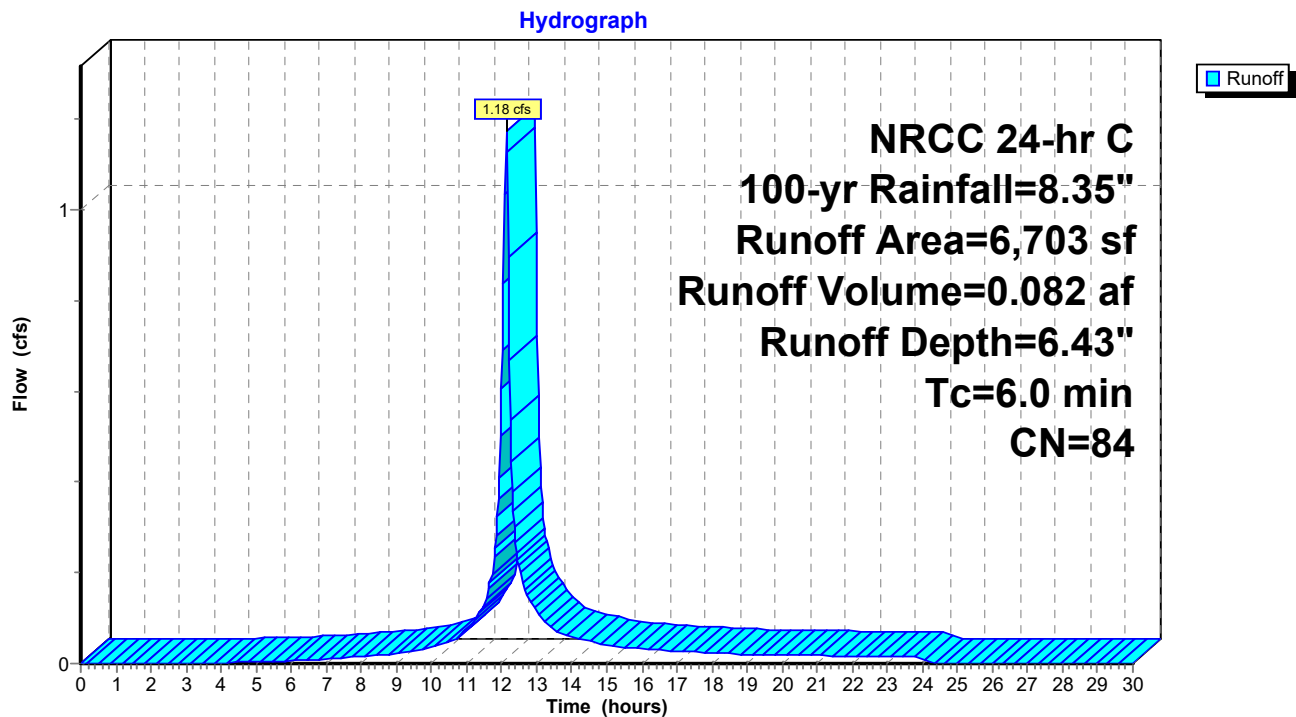
Runoff = 1.18 cfs @ 12.13 hrs, Volume= 0.082 af, Depth= 6.43"
Routed to Pond B-2 : North Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
453	96	Gravel surface, HSG D
* 1,031	96	Permeable paver, HSG D
445	80	>75% Grass cover, Good, HSG D
* 3,601	79	Landscaping, Good, HSG D
692	77	Woods, Good, HSG D
481	98	Paved parking, HSG D
6,703	84	Weighted Average
6,222		92.82% Pervious Area
481		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7: North basin



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Summary for Subcatchment PR-7B: CCB 26

Runoff = 0.83 cfs @ 12.13 hrs, Volume= 0.063 af, Depth= 7.63"
Routed to Reach R2 : Site Stormwater System

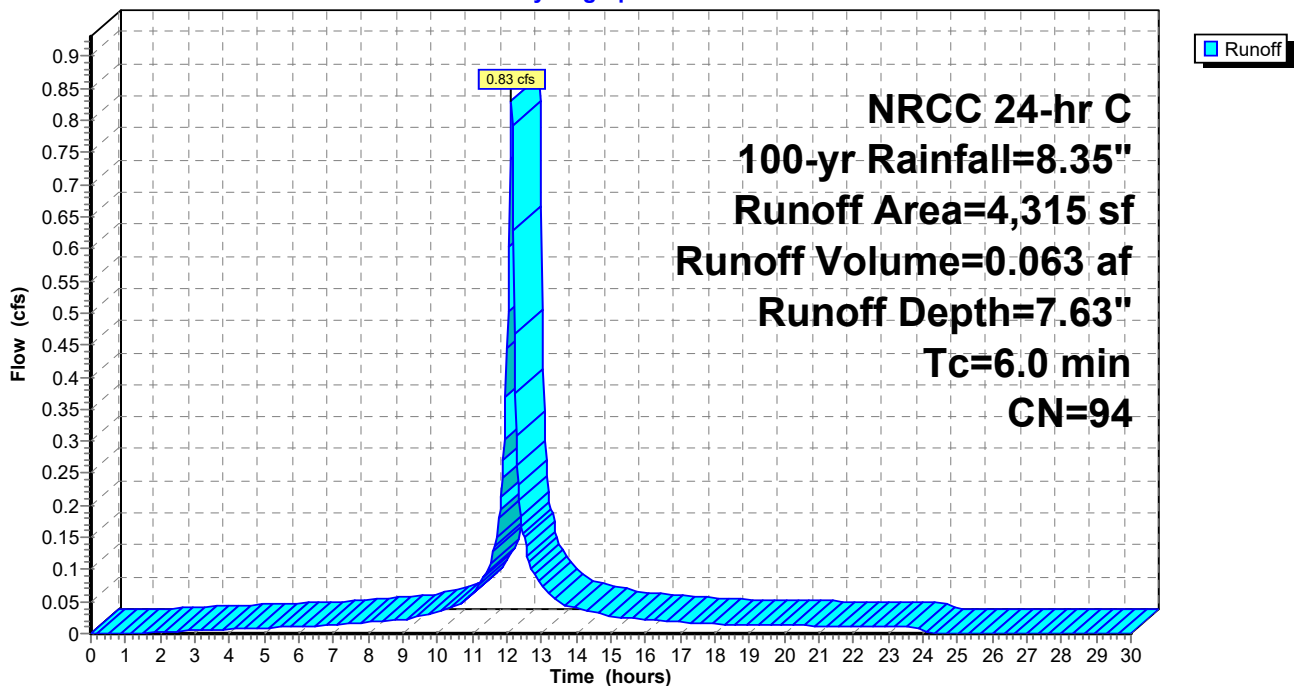
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
3,518	98	Paved parking, HSG D
* 797	79	Landscaping, Good, HSG D
4,315	94	Weighted Average
797		18.47% Pervious Area
3,518		81.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-7B: CCB 26

Hydrograph



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Summary for Subcatchment PR-8: CCB 26A

Runoff = 1.24 cfs @ 12.13 hrs, Volume= 0.093 af, Depth= 7.51"
Routed to Reach R2 : Site Stormwater System

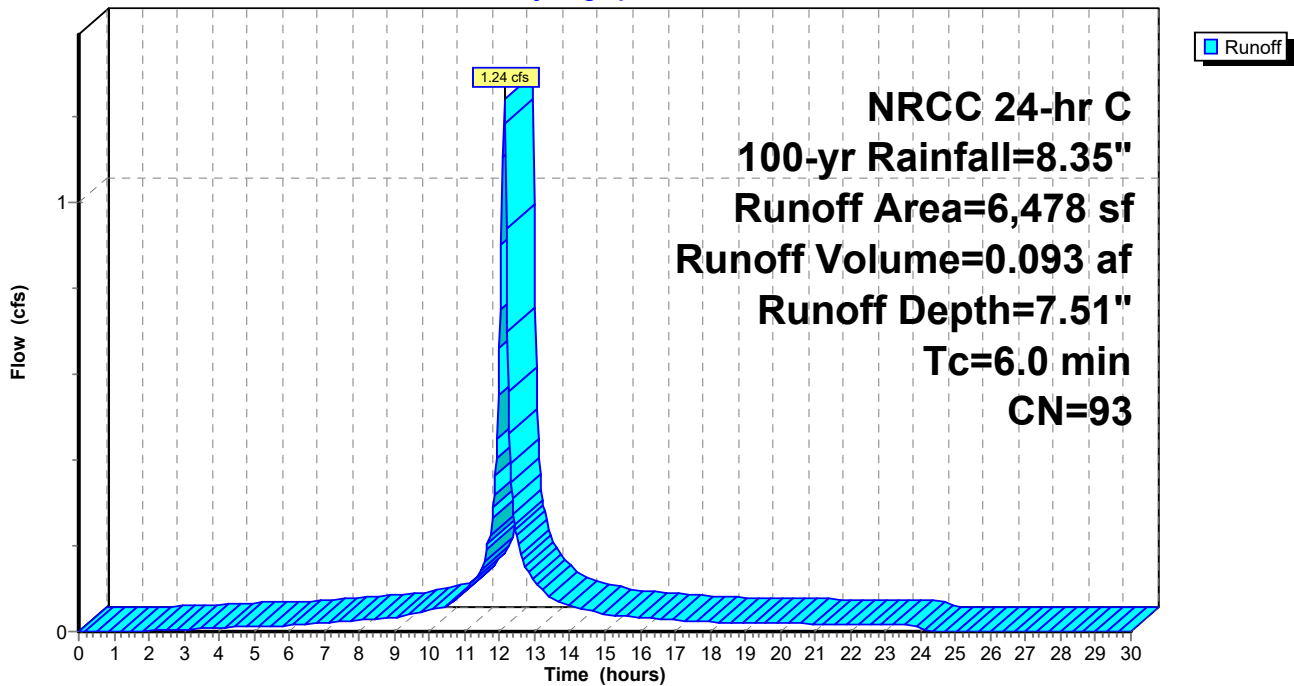
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
4,737	98	Paved parking, HSG D
* 1,741	79	Landscaping, Good, HSG D
6,478	93	Weighted Average
1,741		26.88% Pervious Area
4,737		73.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-8: CCB 26A

Hydrograph



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Summary for Subcatchment PR-9: CCB 27

Runoff = 2.36 cfs @ 12.13 hrs, Volume= 0.168 af, Depth= 6.67"
Routed to Reach R2 : Site Stormwater System

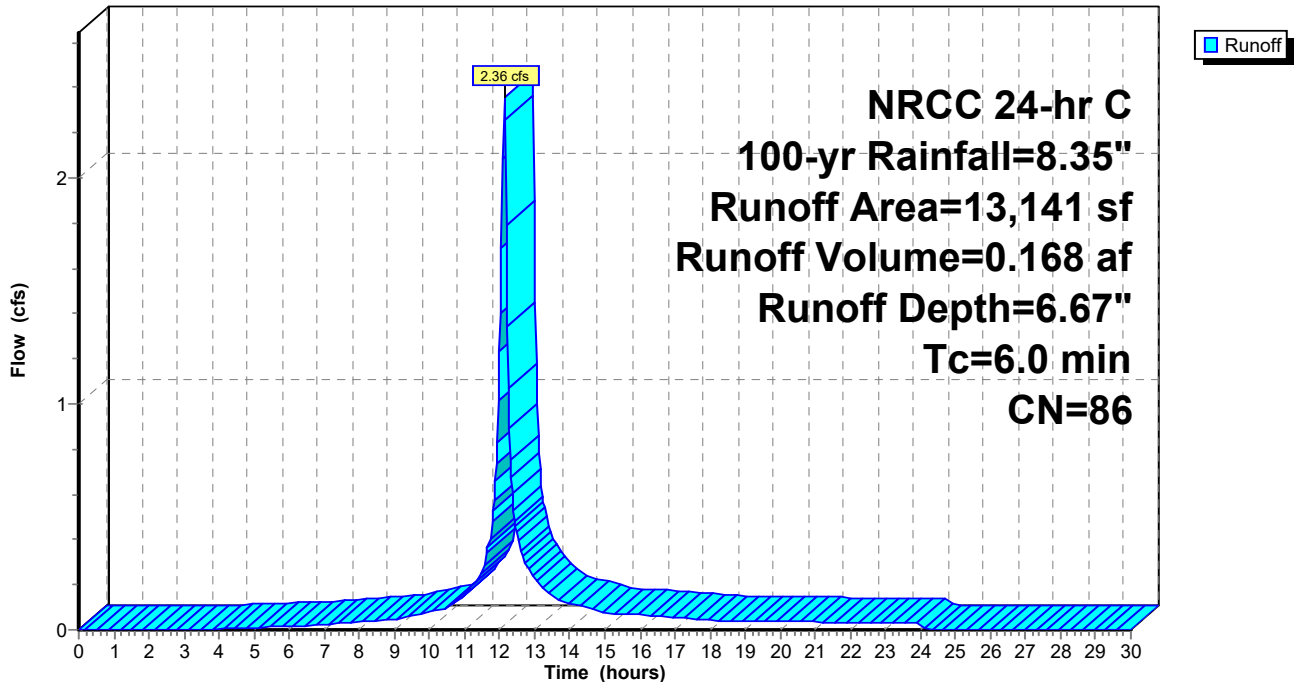
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
NRCC 24-hr C 100-yr Rainfall=8.35"

Area (sf)	CN	Description
4,730	98	Paved parking, HSG D
817	80	>75% Grass cover, Good, HSG D
* 7,594	79	Landscaping, Good, HSG D
13,141	86	Weighted Average
8,411		64.01% Pervious Area
4,730		35.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed minimum

Subcatchment PR-9: CCB 27

Hydrograph



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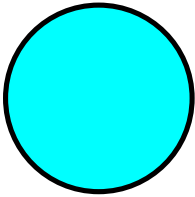
Summary for Reach R1: Roof Leader

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 8.11" for 100-yr event
Inflow = 15.67 cfs @ 12.13 hrs, Volume= 1.242 af
Outflow = 1.38 cfs @ 11.13 hrs, Volume= 1.242 af, Atten= 91%, Lag= 0.0 min
Routed to Pond S-2 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.28 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.16 fps, Avg. Travel Time= 0.1 min

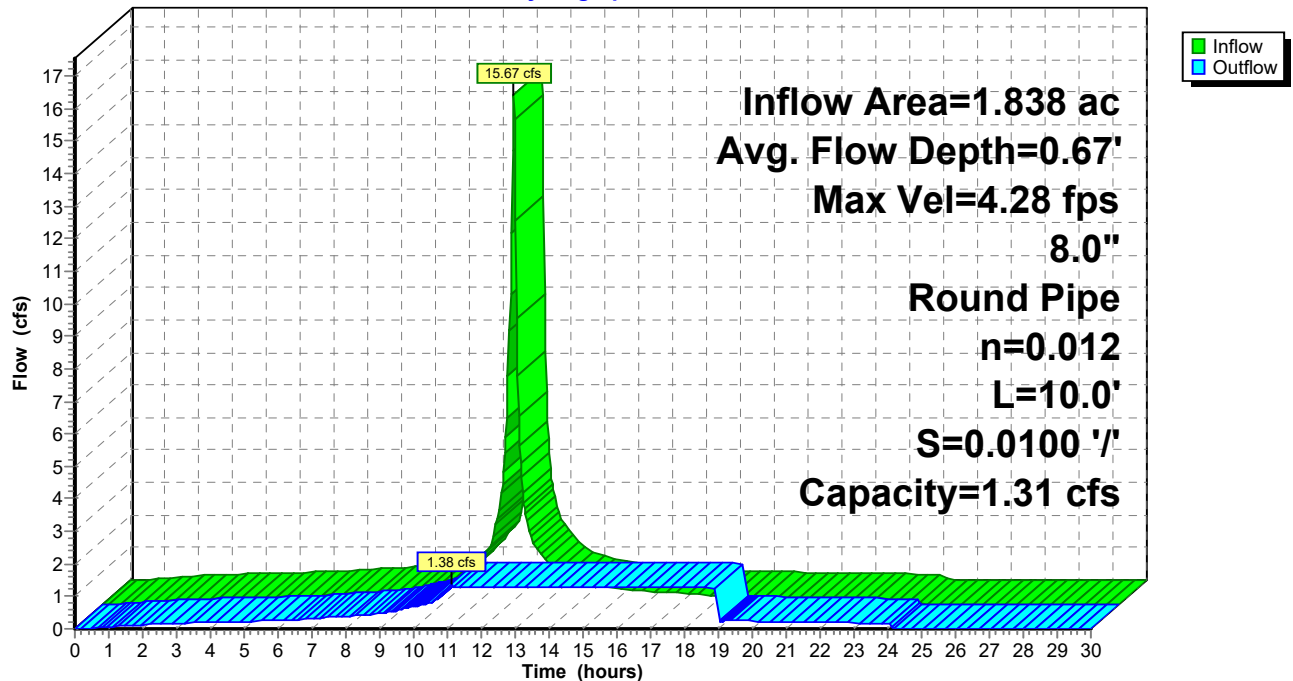
Peak Storage= 3 cf @ 11.16 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 0.00'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 1.31 cfs

8.0" Round Pipe
n= 0.012
Length= 10.0' Slope= 0.0100 '/'
Inlet Invert= 142.20', Outlet Invert= 142.10'



Reach R1: Roof Leader

Hydrograph

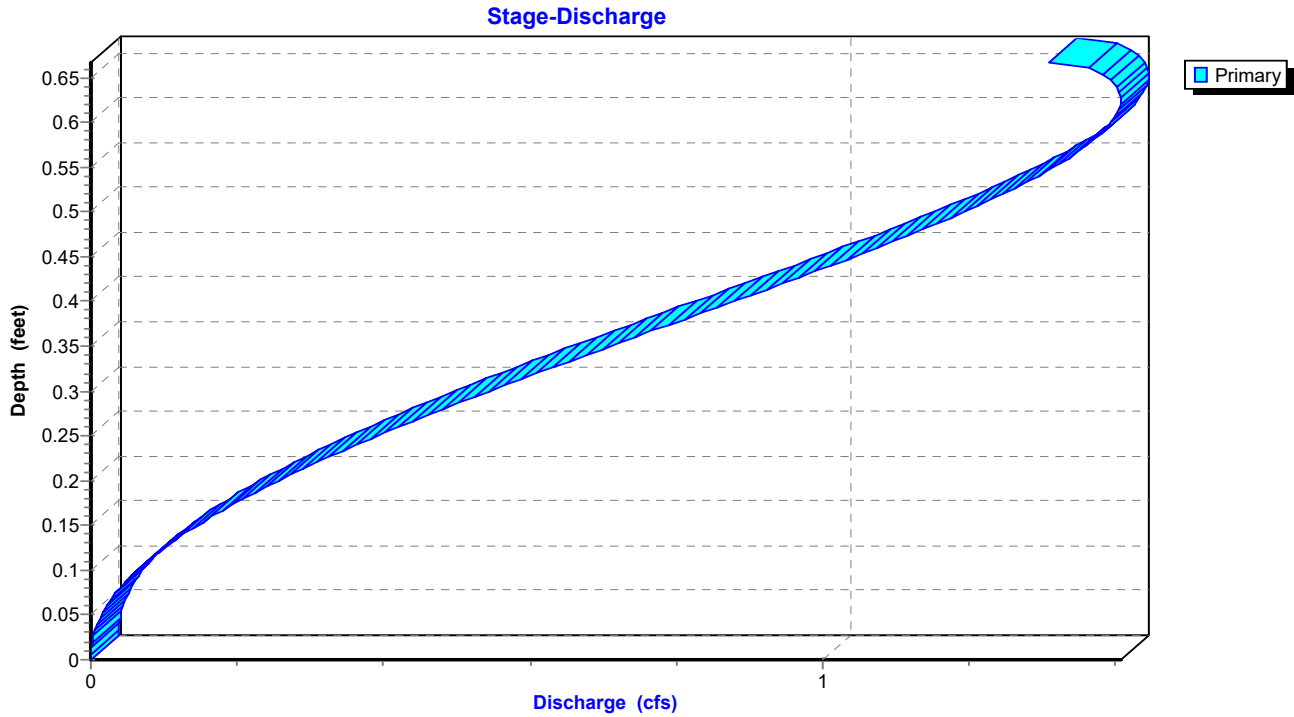


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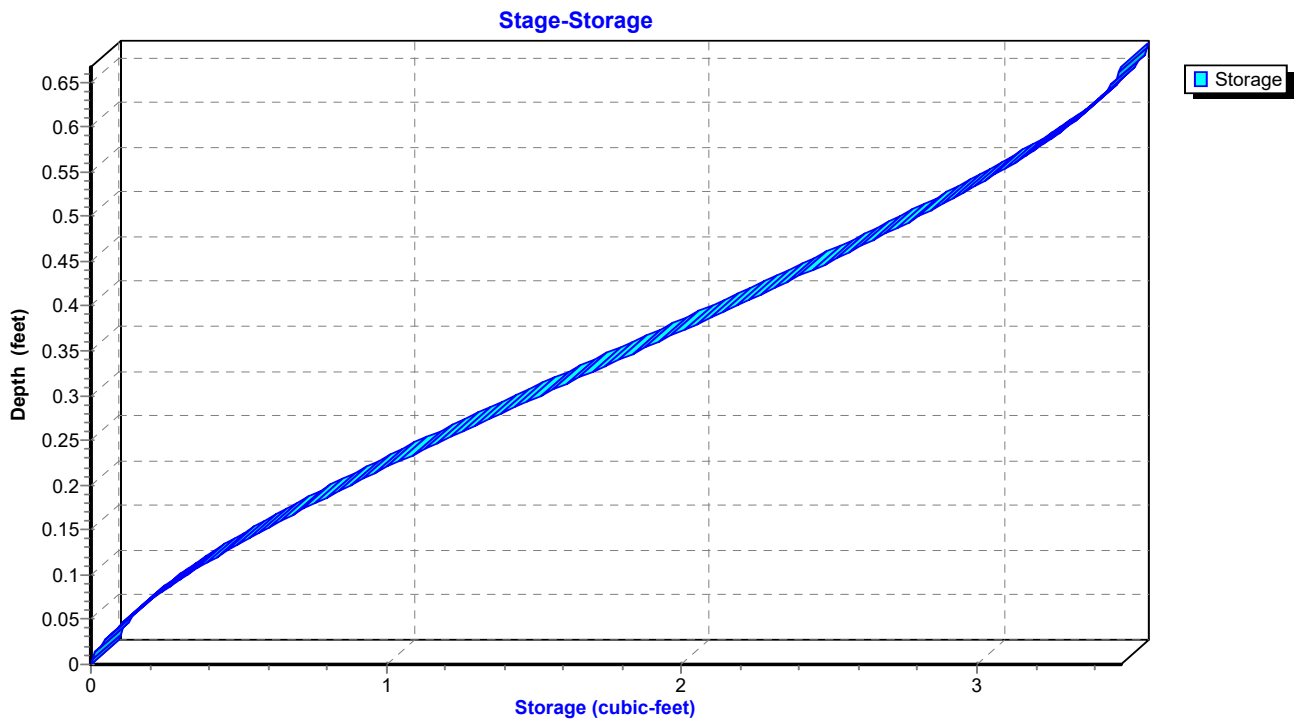
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Reach R1: Roof Leader



Reach R1: Roof Leader



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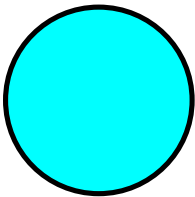
Summary for Reach R2: Site Stormwater System

Inflow Area = 1.221 ac, 71.23% Impervious, Inflow Depth = 7.43" for 100-yr event
Inflow = 10.09 cfs @ 12.13 hrs, Volume= 0.756 af
Outflow = 5.26 cfs @ 12.01 hrs, Volume= 0.756 af, Atten= 48%, Lag= 0.0 min
Routed to Pond S-3 : Subsurface Infiltration System

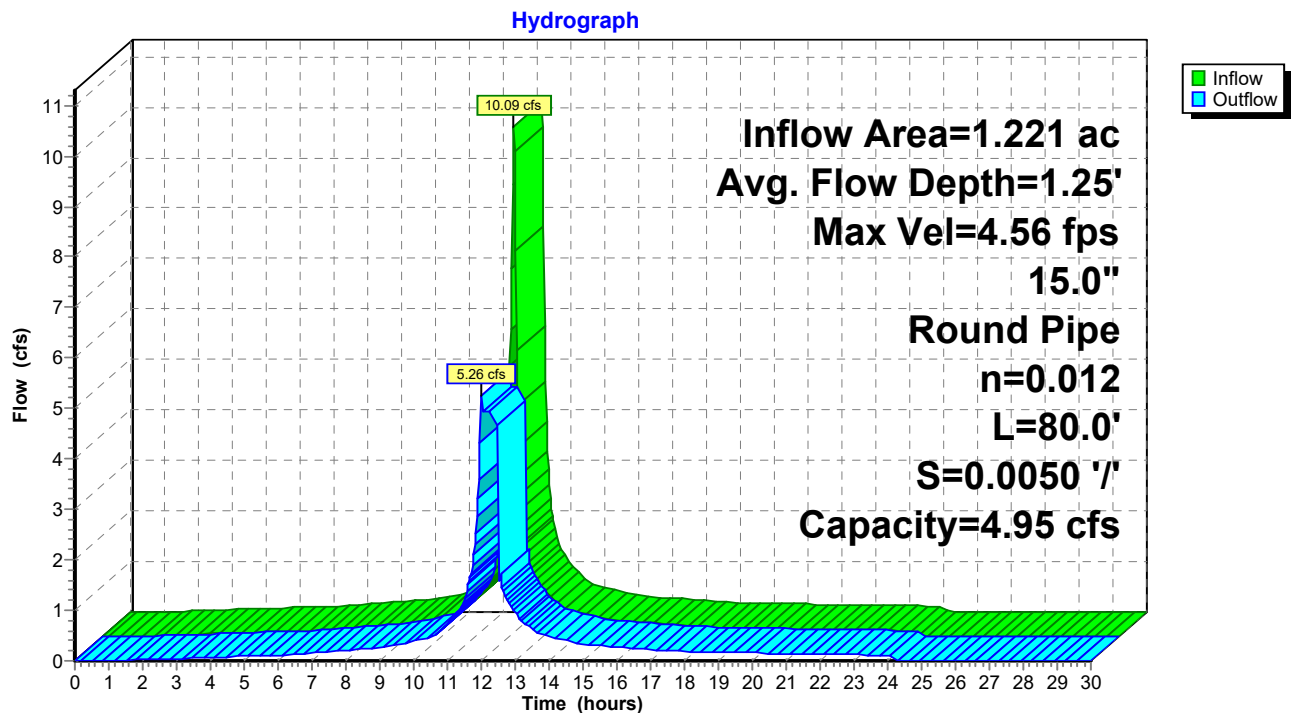
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 4.56 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.97 fps, Avg. Travel Time= 0.7 min

Peak Storage= 98 cf @ 12.03 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.95 cfs

15.0" Round Pipe
n= 0.012
Length= 80.0' Slope= 0.0050 '/'
Inlet Invert= 138.00', Outlet Invert= 137.60'



Reach R2: Site Stormwater System

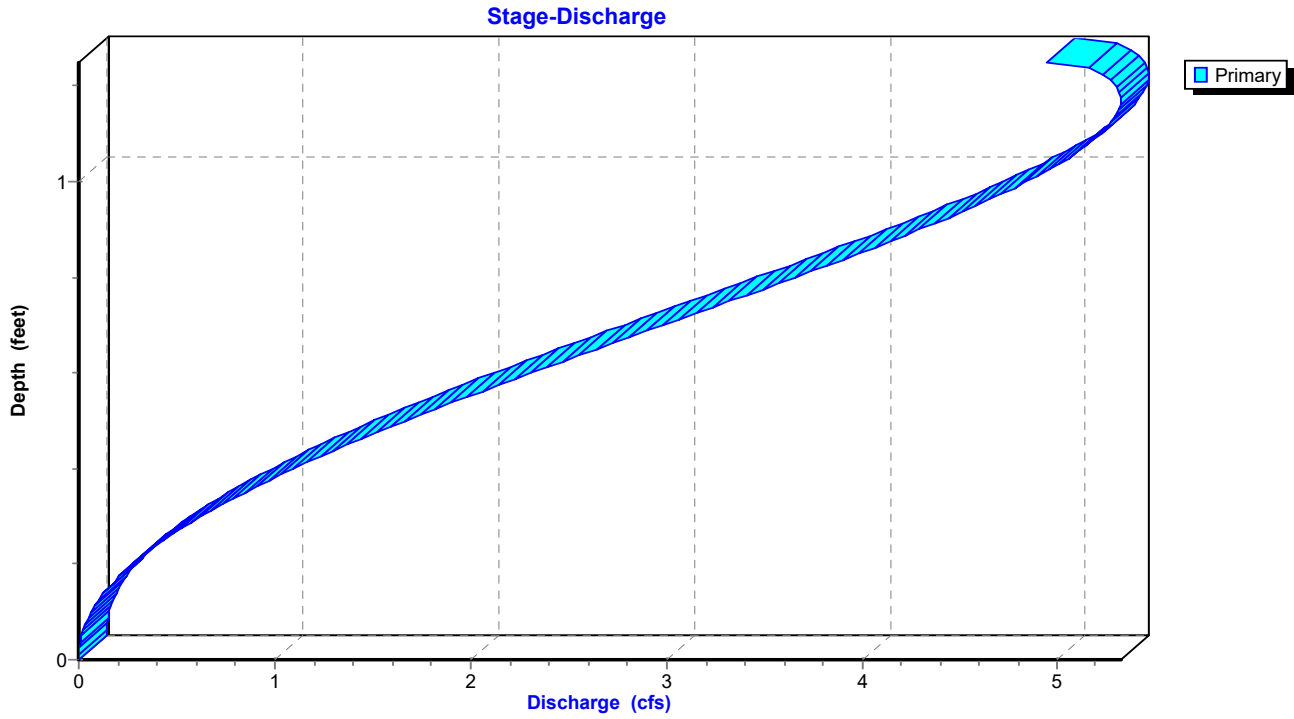


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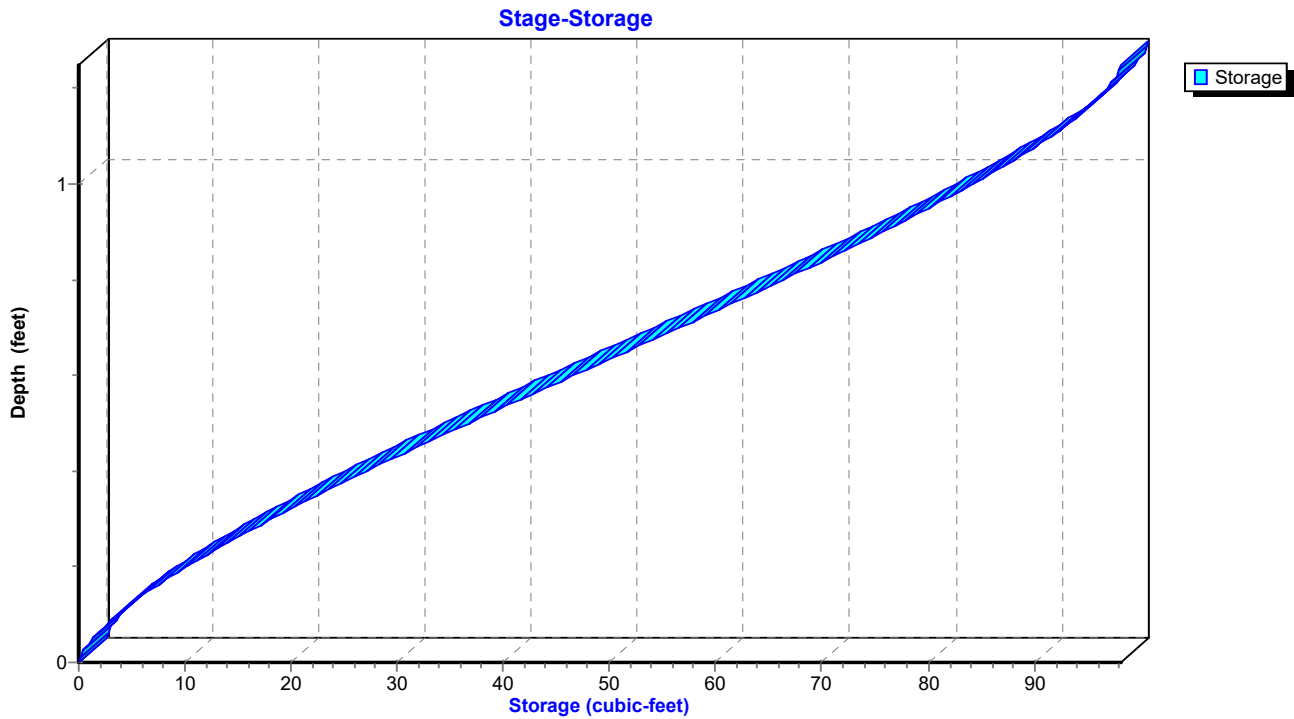
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Reach R2: Site Stormwater System



Reach R2: Site Stormwater System



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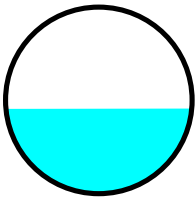
Summary for Reach R3: East Stormwater System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 3.42" for 100-yr event
Inflow = 2.98 cfs @ 12.18 hrs, Volume= 0.185 af
Outflow = 2.98 cfs @ 12.18 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.3 min
Routed to Pond S-1 : Subsurface Infiltration System

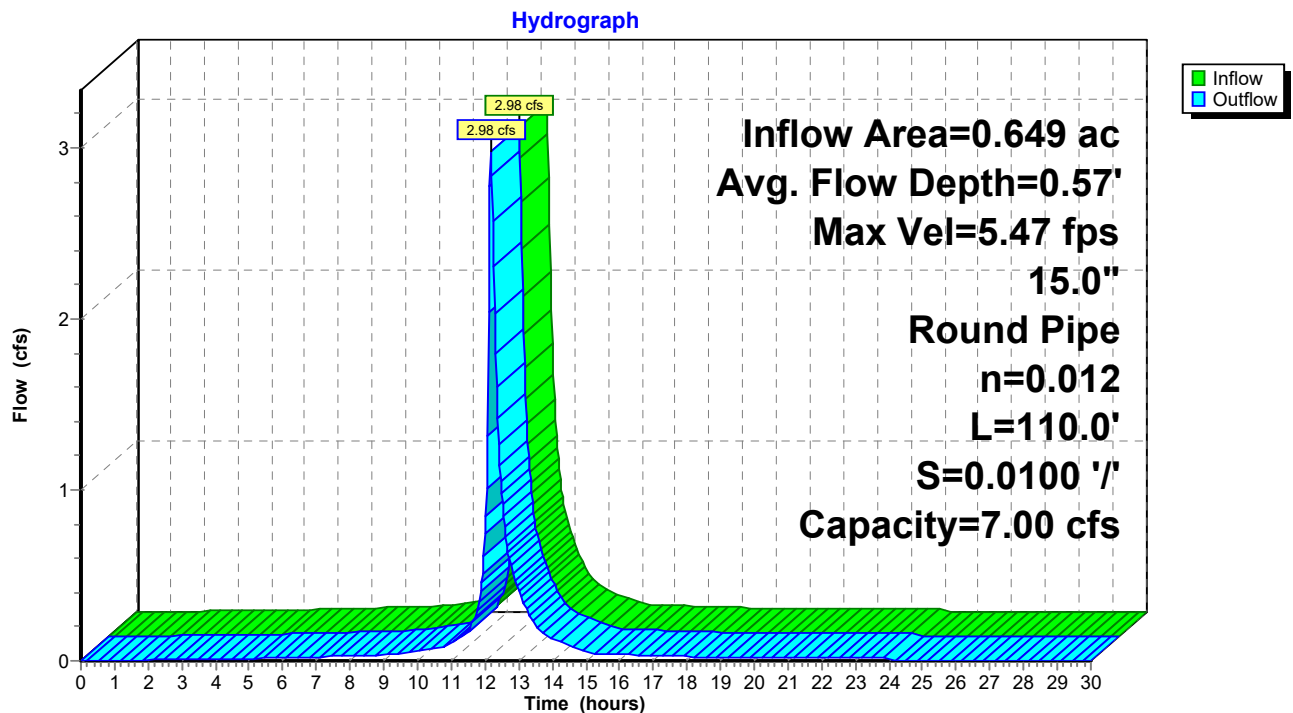
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Max. Velocity= 5.47 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.53 fps, Avg. Travel Time= 1.2 min

Peak Storage= 60 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.00 cfs

15.0" Round Pipe
n= 0.012
Length= 110.0' Slope= 0.0100 '/'
Inlet Invert= 144.80', Outlet Invert= 143.70'



Reach R3: East Stormwater System

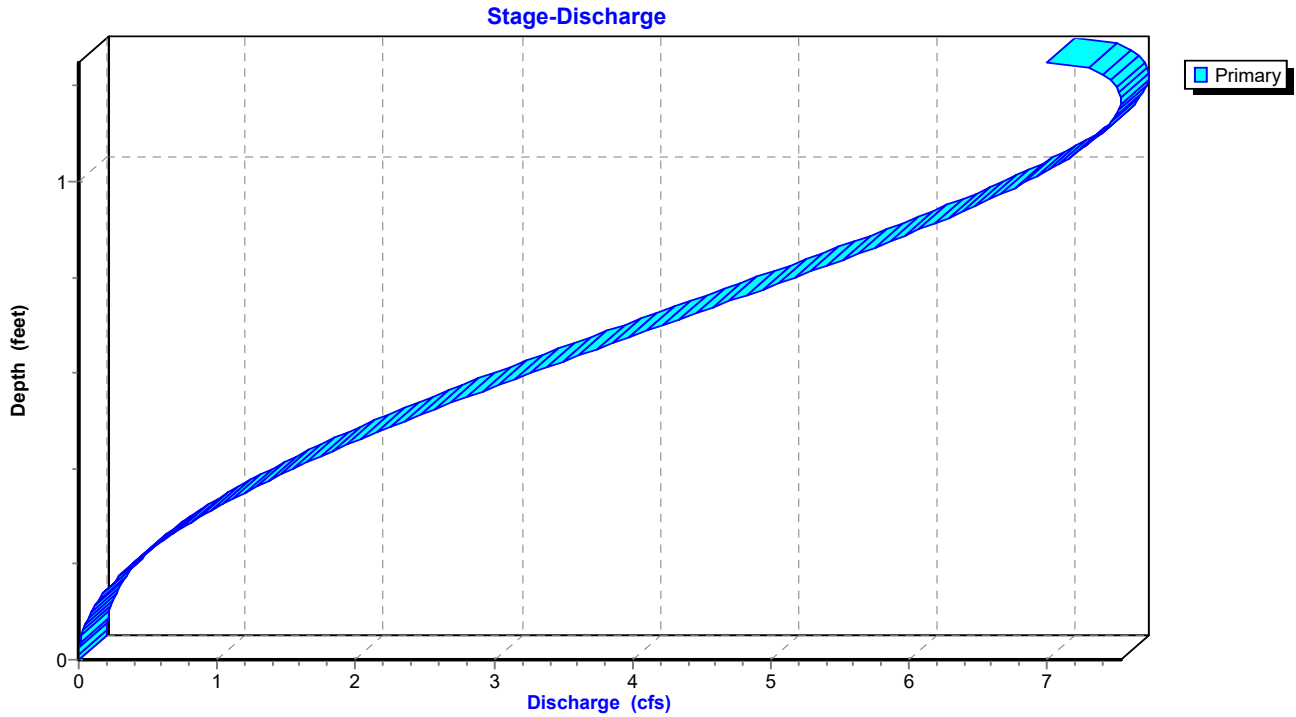


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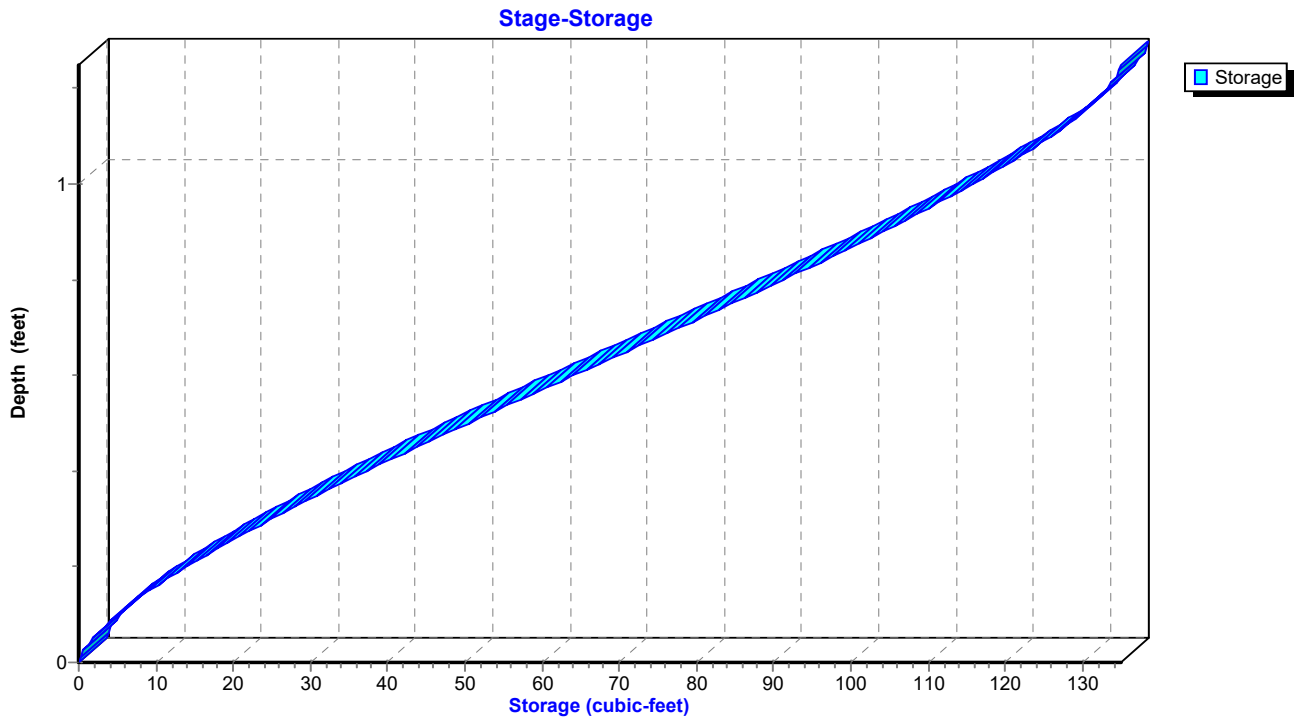
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Reach R3: East Stormwater System



Reach R3: East Stormwater System



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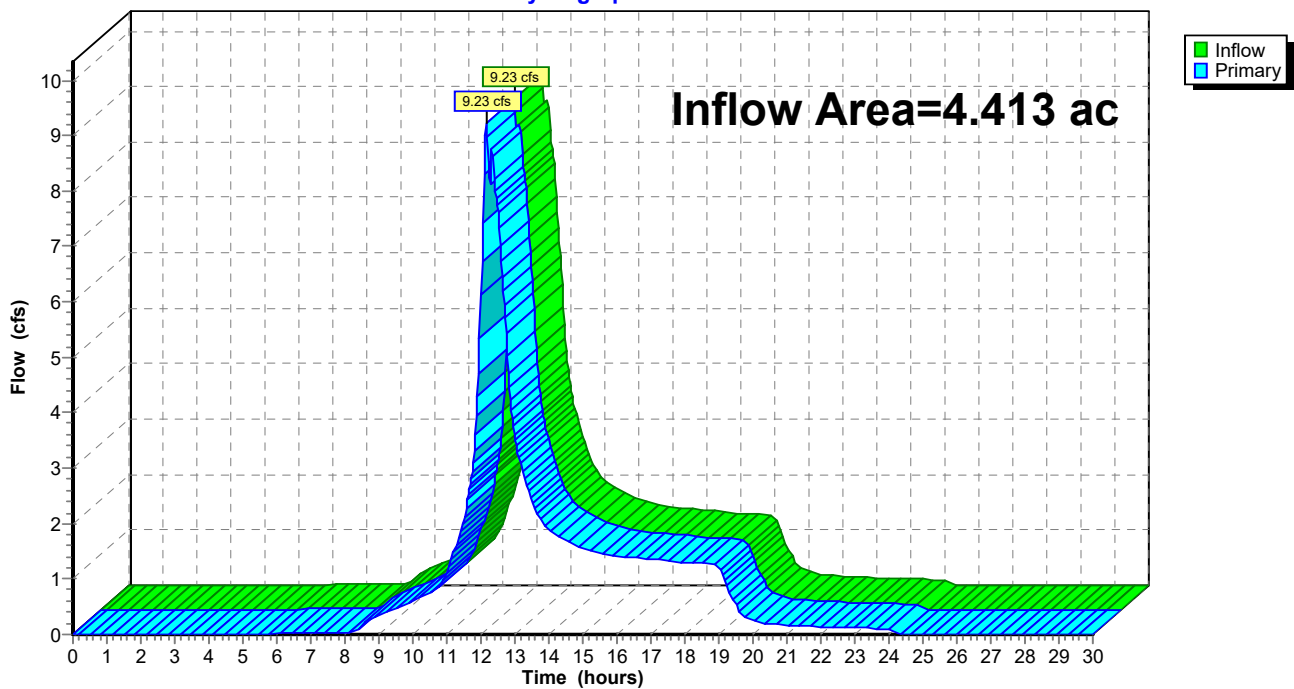
Summary for Pond AP-1: Norwalk River

Inflow Area = 4.413 ac, 66.52% Impervious, Inflow Depth = 4.87" for 100-yr event
Inflow = 9.23 cfs @ 12.15 hrs, Volume= 1.790 af
Primary = 9.23 cfs @ 12.15 hrs, Volume= 1.790 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-1: Norwalk River

Hydrograph



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Summary for Pond AP-2: Front Lawn Rain Garden

Inflow Area = 0.475 ac, 24.65% Impervious, Inflow Depth = 6.39" for 100-yr event
Inflow = 3.57 cfs @ 12.13 hrs, Volume= 0.253 af
Outflow = 2.15 cfs @ 12.21 hrs, Volume= 0.253 af, Atten= 40%, Lag= 5.0 min
Discarded = 0.16 cfs @ 12.21 hrs, Volume= 0.177 af
Primary = 1.99 cfs @ 12.21 hrs, Volume= 0.076 af
Routed to Reach R3 : East Stormwater System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 149.26' @ 12.21 hrs Surf.Area= 3,493 sf Storage= 3,217 cf

Plug-Flow detention time= 133.4 min calculated for 0.253 af (100% of inflow)
Center-of-Mass det. time= 133.4 min (926.2 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	6,536 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	1,985	0	0
149.00	2,833	2,409	2,409
150.00	5,420	4,127	6,536

Device	Routing	Invert	Outlet Devices
#1	Primary	141.00'	15.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 141.00' / 140.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	149.00'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	148.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 12.21 hrs HW=149.26' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.16 cfs)

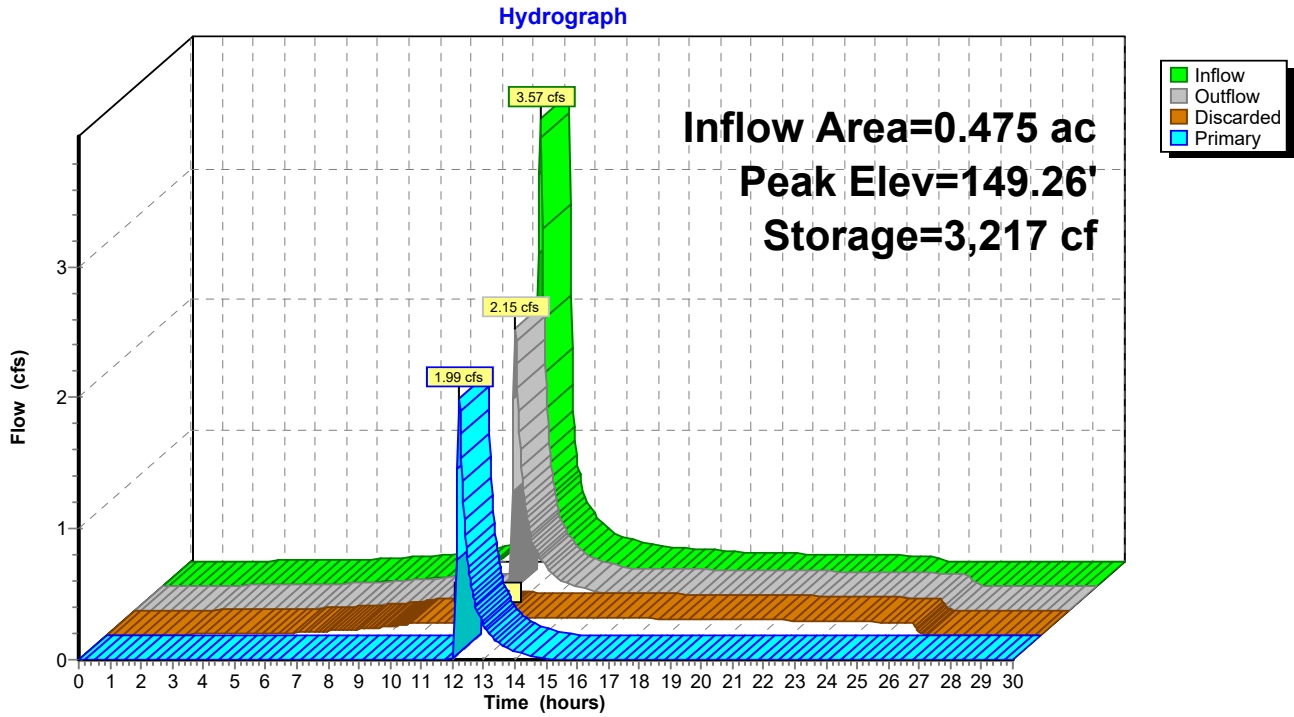
Primary OutFlow Max=1.99 cfs @ 12.21 hrs HW=149.26' (Free Discharge)
↑**1=Culvert** (Passes 1.99 cfs of 16.32 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 1.99 cfs @ 1.65 fps)

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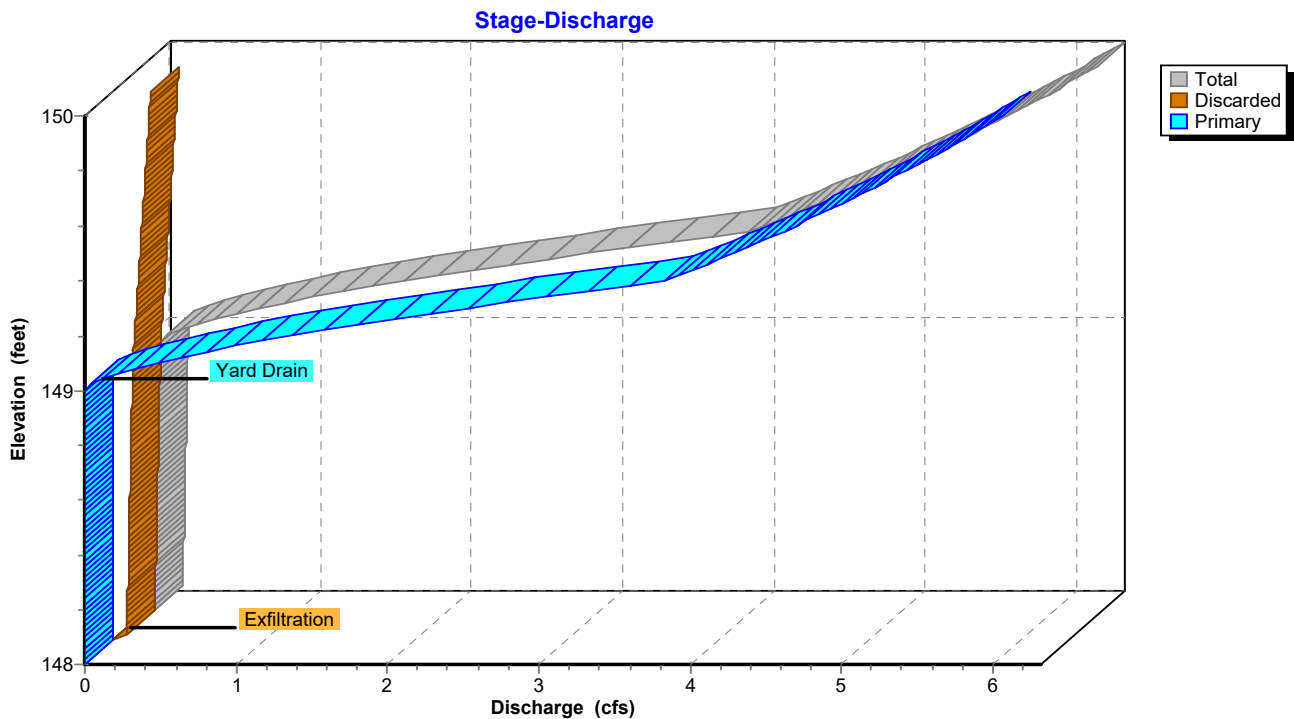
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Pond AP-2: Front Lawn Rain Garden



Pond AP-2: Front Lawn Rain Garden

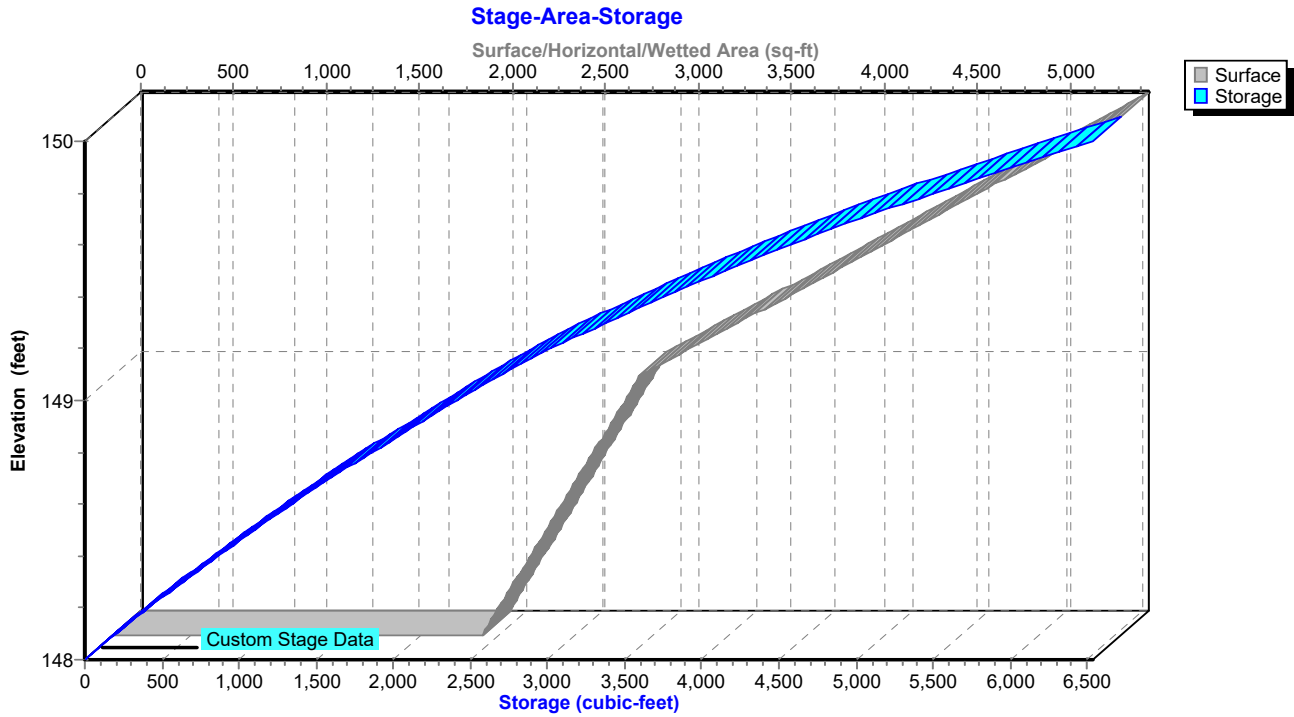


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Pond AP-2: Front Lawn Rain Garden



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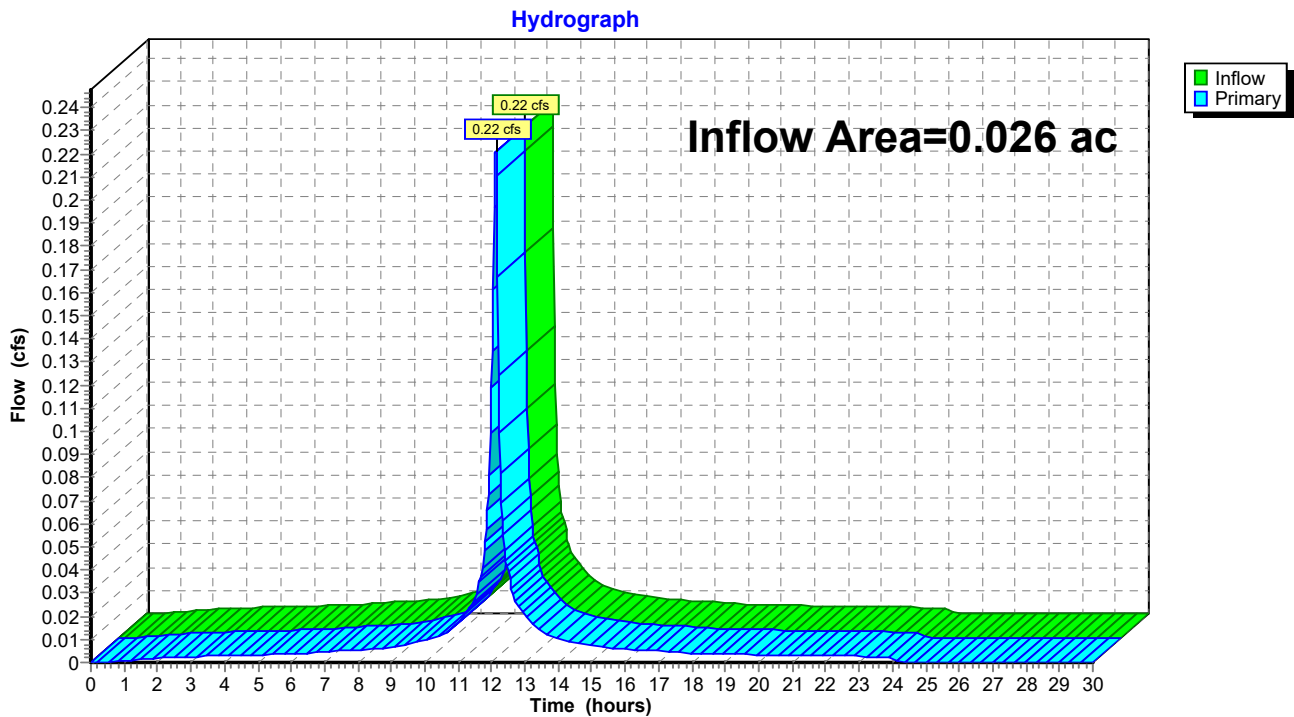
Proposed Conditions
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Summary for Pond AP-3: Danbury Road

Inflow Area = 0.026 ac, 100.00% Impervious, Inflow Depth = 8.11" for 100-yr event
Inflow = 0.22 cfs @ 12.13 hrs, Volume= 0.018 af
Primary = 0.22 cfs @ 12.13 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-3: Danbury Road



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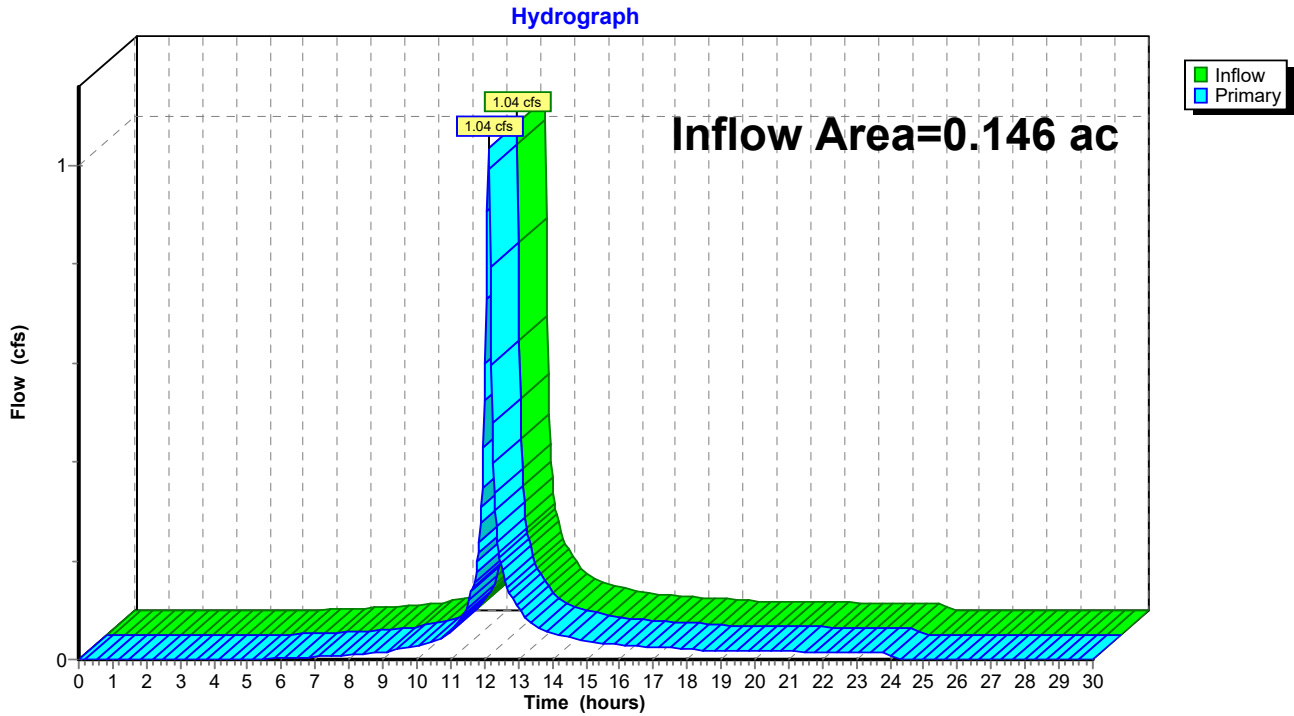
Proposed Conditions
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Summary for Pond AP-4: Landscaped Area

Inflow Area = 0.146 ac, 1.46% Impervious, Inflow Depth = 5.83" for 100-yr event
Inflow = 1.04 cfs @ 12.13 hrs, Volume= 0.071 af
Primary = 1.04 cfs @ 12.13 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Pond AP-4: Landscaped Area



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Summary for Pond B-1: South Basin

Inflow Area = 0.116 ac, 17.66% Impervious, Inflow Depth = 6.31" for 100-yr event
Inflow = 0.87 cfs @ 12.13 hrs, Volume= 0.061 af
Outflow = 0.85 cfs @ 12.14 hrs, Volume= 0.061 af, Atten= 3%, Lag= 1.0 min
Discarded = 0.03 cfs @ 12.14 hrs, Volume= 0.032 af
Primary = 0.82 cfs @ 12.14 hrs, Volume= 0.029 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 140.04' @ 12.14 hrs Surf.Area= 555 sf Storage= 406 cf

Plug-Flow detention time= 90.7 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 90.8 min (890.9 - 800.1)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,118 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	228	0	0
140.00	539	384	384
141.00	929	734	1,118

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	8.0" Round Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.60' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	139.90'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.14 hrs HW=140.04' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

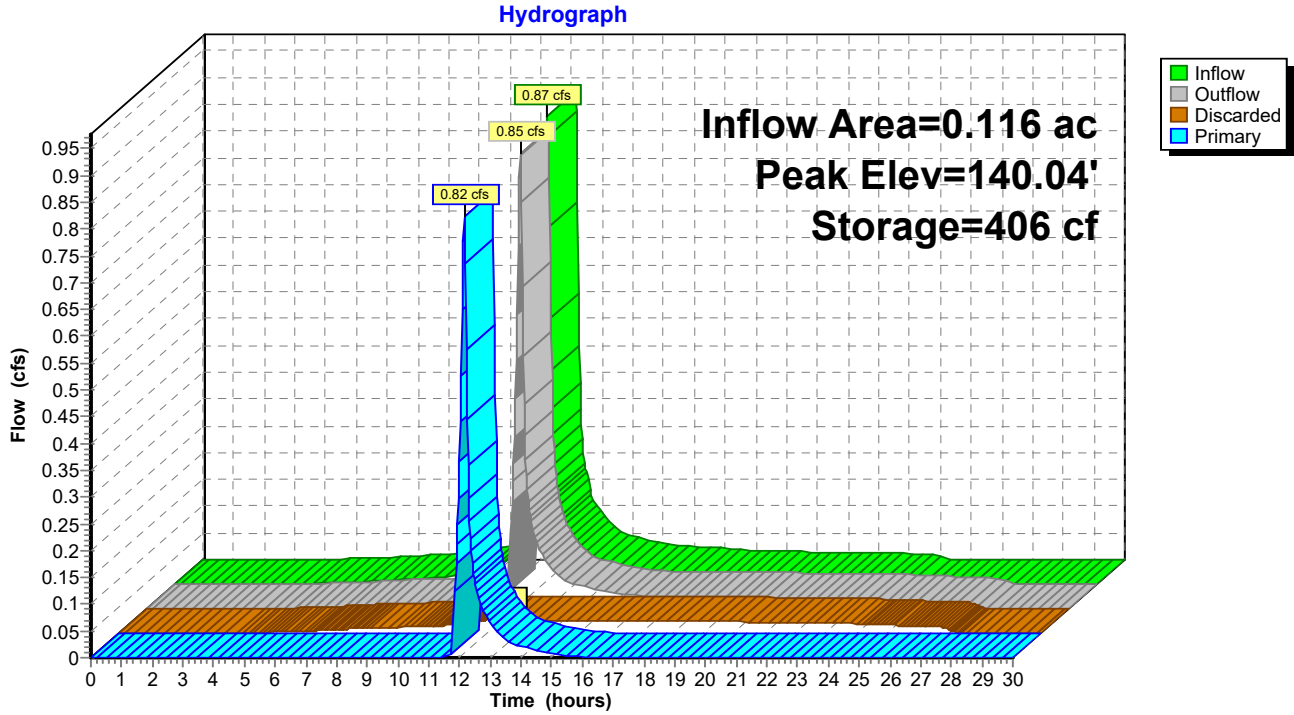
Primary OutFlow Max=0.81 cfs @ 12.14 hrs HW=140.04' (Free Discharge)
↑**1=Culvert** (Passes 0.81 cfs of 2.04 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 0.81 cfs @ 1.23 fps)

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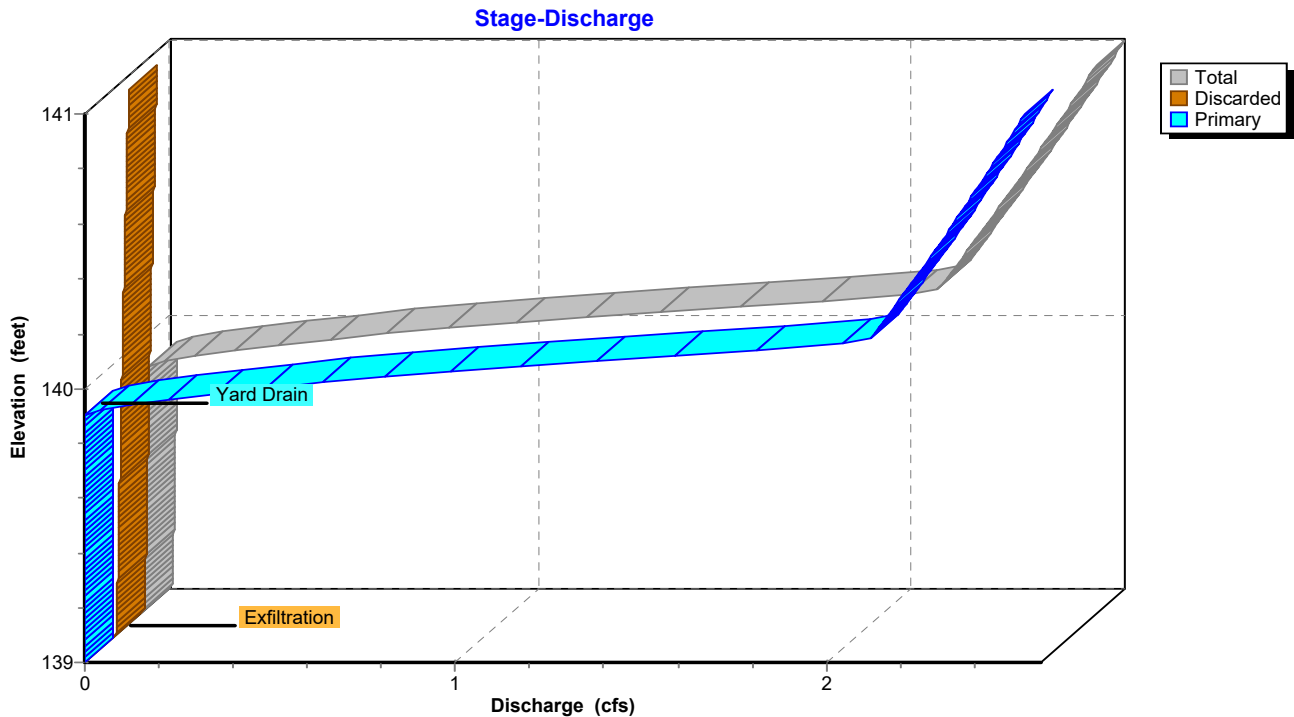
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Pond B-1: South Basin



Pond B-1: South Basin



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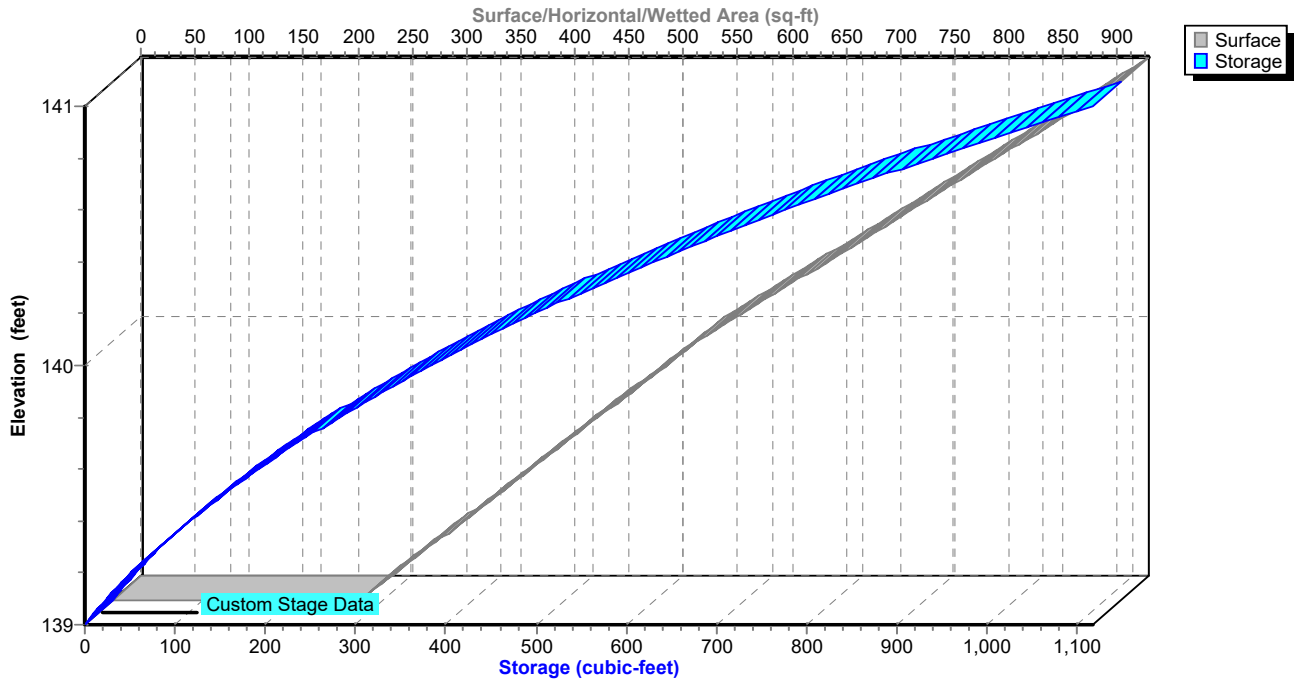
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Pond B-1: South Basin

Stage-Area-Storage



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Summary for Pond B-2: North Basin

Inflow Area = 0.154 ac, 7.18% Impervious, Inflow Depth = 6.43" for 100-yr event
Inflow = 1.18 cfs @ 12.13 hrs, Volume= 0.082 af
Outflow = 1.11 cfs @ 12.15 hrs, Volume= 0.082 af, Atten= 5%, Lag= 1.5 min
Discarded = 0.04 cfs @ 12.15 hrs, Volume= 0.051 af
Primary = 1.07 cfs @ 12.15 hrs, Volume= 0.032 af
Routed to Pond S-3 : Subsurface Infiltration System

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.97' @ 12.15 hrs Surf.Area= 919 sf Storage= 731 cf

Plug-Flow detention time= 95.7 min calculated for 0.082 af (100% of inflow)
Center-of-Mass det. time= 95.7 min (893.1 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	1,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	589	0	0
140.00	930	760	760
141.00	1,327	1,129	1,888

Device	Routing	Invert	Outlet Devices
#1	Primary	138.00'	10.0" Round Culvert L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 138.00' / 137.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.55 sf
#2	Device 1	139.80'	3.6" x 0.9" Horiz. Yard Drain X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads
#3	Discarded	139.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.15 hrs HW=139.97' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

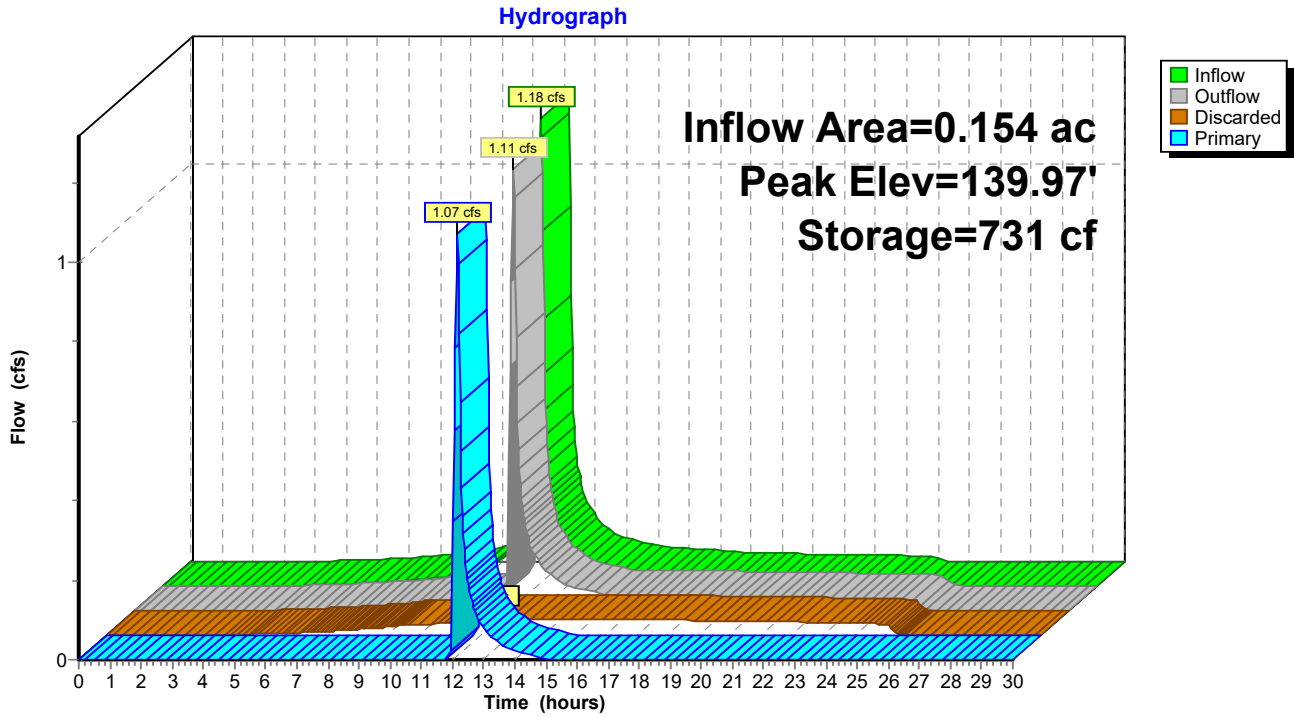
Primary OutFlow Max=1.06 cfs @ 12.15 hrs HW=139.97' (Free Discharge)
↑**1=Culvert** (Passes 1.06 cfs of 2.22 cfs potential flow)
↑**2=Yard Drain** (Weir Controls 1.06 cfs @ 1.34 fps)

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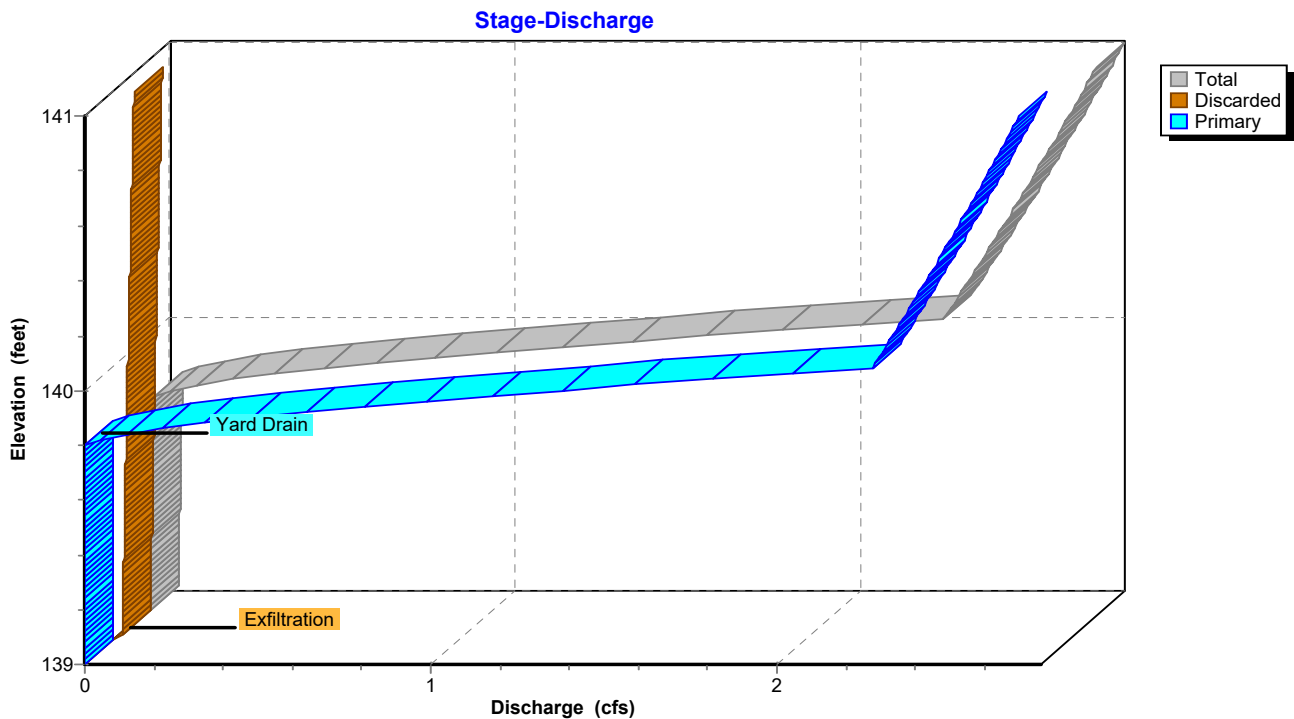
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Pond B-2: North Basin



Pond B-2: North Basin



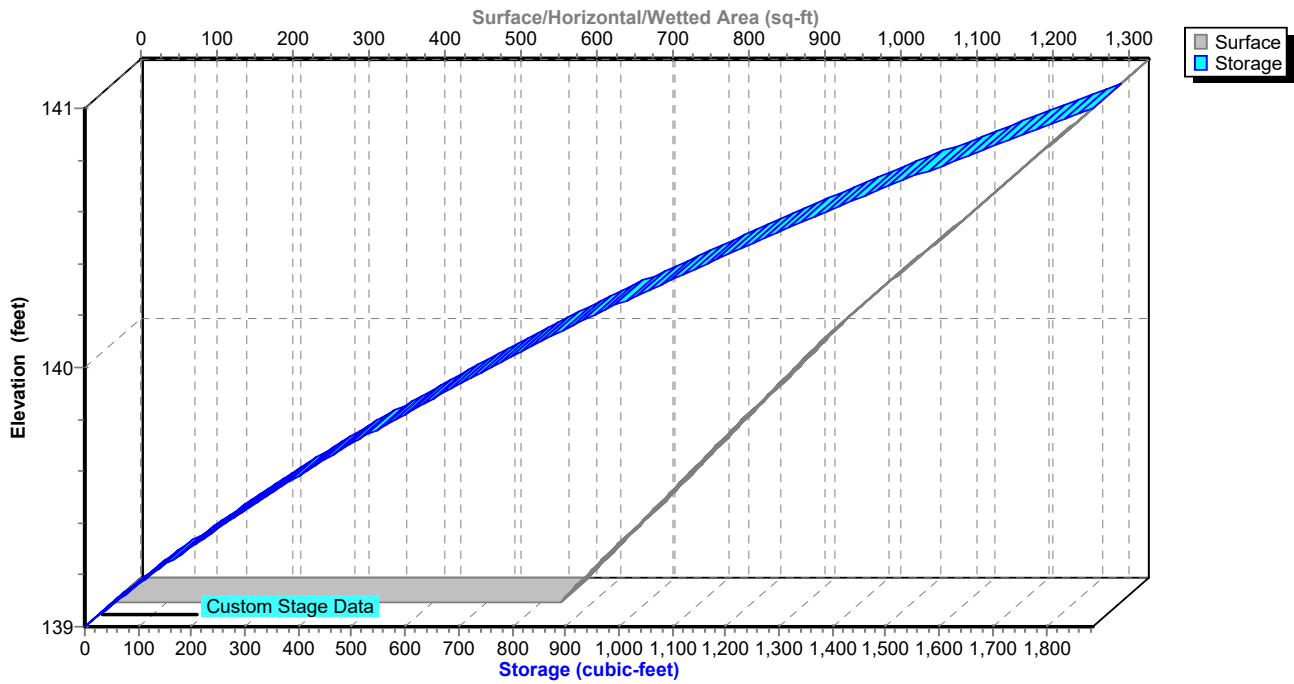
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Pond B-2: North Basin

Stage-Area-Storage



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Summary for Pond S-1: Subsurface Infiltration System

Inflow Area = 0.649 ac, 27.06% Impervious, Inflow Depth = 3.42" for 100-yr event
Inflow = 2.98 cfs @ 12.18 hrs, Volume= 0.185 af
Outflow = 1.92 cfs @ 12.33 hrs, Volume= 0.185 af, Atten= 36%, Lag= 8.6 min
Discarded = 0.06 cfs @ 10.08 hrs, Volume= 0.087 af
Primary = 1.86 cfs @ 12.33 hrs, Volume= 0.098 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 146.14' @ 12.33 hrs Surf.Area= 0.029 ac Storage= 0.055 af

Plug-Flow detention time= 97.7 min calculated for 0.185 af (100% of inflow)
Center-of-Mass det. time= 97.6 min (859.2 - 761.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.10'	0.026 af	20.50'W x 60.58'L x 3.50'H Field A 0.100 af Overall - 0.034 af Embedded = 0.066 af x 40.0% Voids
#2A	143.60'	0.034 af	ADS_StormTech SC-740 +Cap x 32 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	144.35'	15.0" Round Culvert L= 119.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.35' / 142.85' S= 0.0126 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	144.63'	4.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	146.00'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	143.10'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 10.08 hrs HW=143.14' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=1.84 cfs @ 12.33 hrs HW=146.14' (Free Discharge)
↑**1=Culvert** (Passes 1.84 cfs of 6.38 cfs potential flow)
↑**2=Orifice** (Orifice Controls 0.97 cfs @ 5.58 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.86 cfs @ 1.23 fps)

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Pond S-1: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

32 Chambers x 45.9 cf = 1,470.1 cf Chamber Storage

4,346.4 cf Field - 1,470.1 cf Chambers = 2,876.3 cf Stone x 40.0% Voids = 1,150.5 cf Stone Storage

Chamber Storage + Stone Storage = 2,620.6 cf = 0.060 af

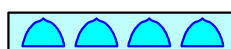
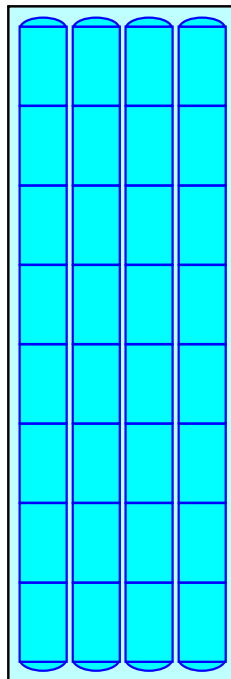
Overall Storage Efficiency = 60.3%

Overall System Size = 60.58' x 20.50' x 3.50'

32 Chambers

161.0 cy Field

106.5 cy Stone

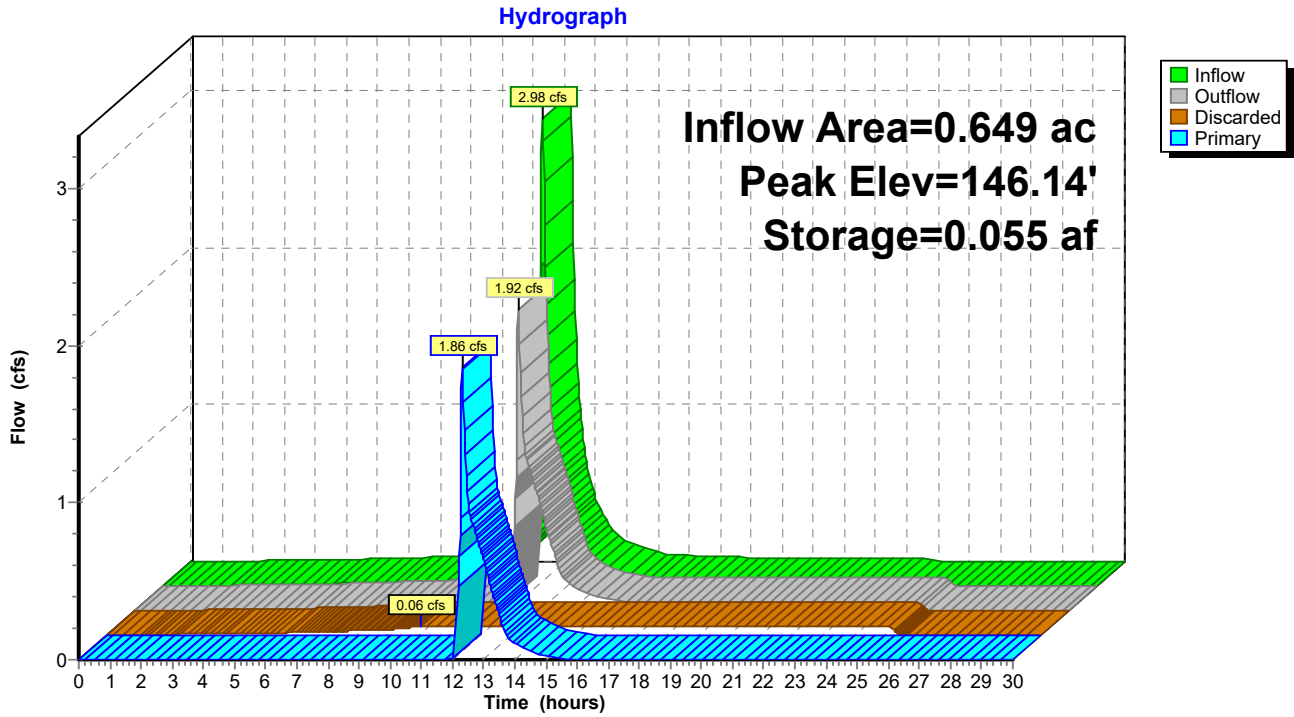


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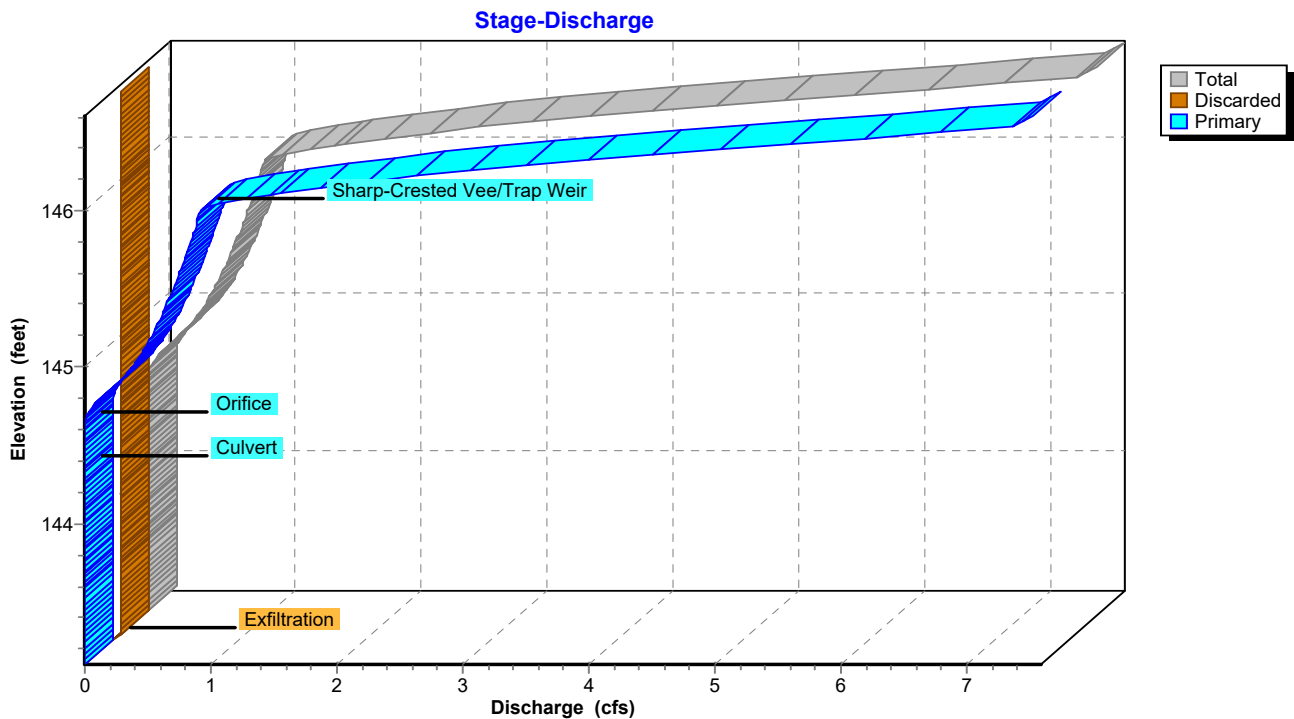
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Pond S-1: Subsurface Infiltration System



Pond S-1: Subsurface Infiltration System

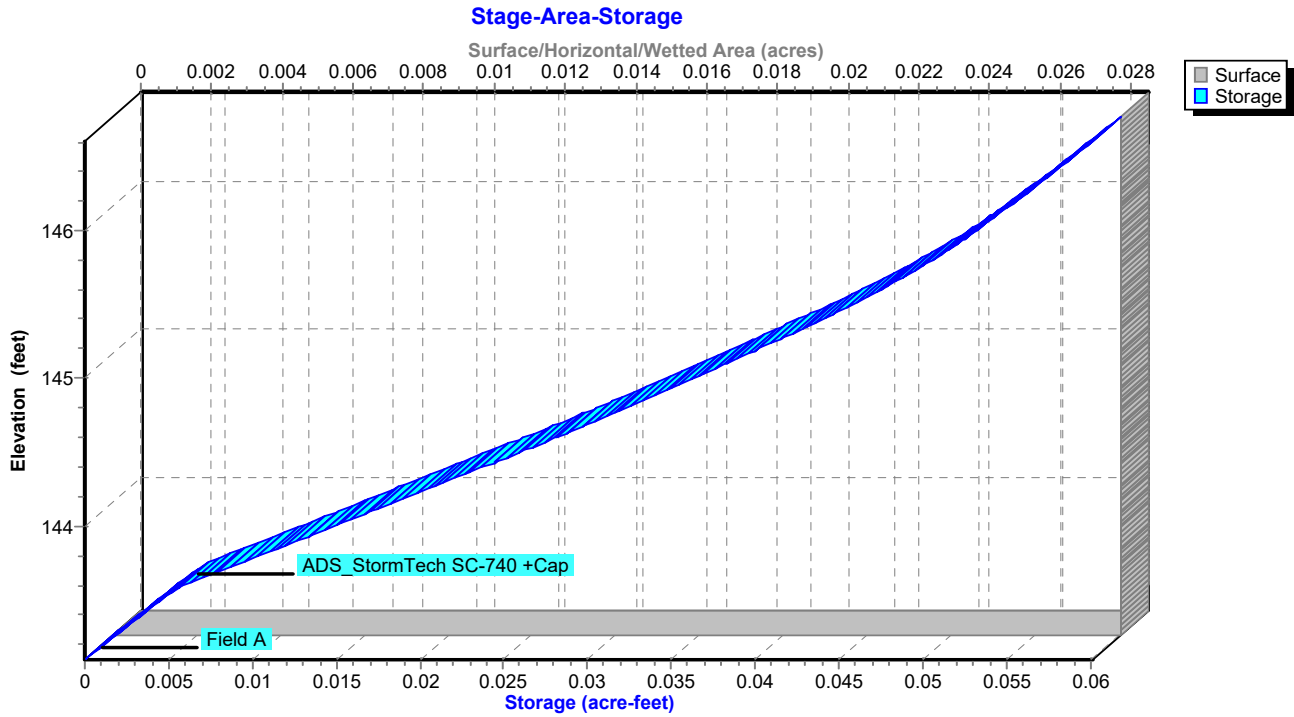


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Pond S-1: Subsurface Infiltration System



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Summary for Pond S-2: Subsurface Infiltration System

Inflow Area = 1.838 ac, 100.00% Impervious, Inflow Depth = 8.11" for 100-yr event
Inflow = 1.38 cfs @ 11.13 hrs, Volume= 1.242 af
Outflow = 1.31 cfs @ 18.99 hrs, Volume= 1.231 af, Atten= 5%, Lag= 471.9 min
Discarded = 0.12 cfs @ 1.83 hrs, Volume= 0.288 af
Primary = 1.19 cfs @ 18.99 hrs, Volume= 0.942 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 144.17' @ 18.99 hrs Surf.Area= 0.060 ac Storage= 0.107 af

Plug-Flow detention time= 86.3 min calculated for 1.231 af (99% of inflow)
Center-of-Mass det. time= 80.9 min (907.6 - 826.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	141.50'	0.054 af	25.25"W x 103.30"L x 3.50"H Field A 0.210 af Overall - 0.074 af Embedded = 0.136 af x 40.0% Voids
#2A	142.00'	0.074 af	ADS_StormTech SC-740 +Cap x 70 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 70 Chambers in 5 Rows
		0.128 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.04'	12.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.04' / 142.29' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	143.14'	5.0" Vert. Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	144.40'	5.0' long Sharp-Crested Vee/Trap Weir Cv= 2.62 (C= 3.28)
#4	Discarded	141.50'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 1.83 hrs HW=141.54' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=1.19 cfs @ 18.99 hrs HW=144.17' (Free Discharge)
↑**1=Culvert** (Passes 1.19 cfs of 3.00 cfs potential flow)
↑**2=Orifice** (Orifice Controls 1.19 cfs @ 4.36 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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Pond S-2: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

14 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 101.30' Row Length +12.0" End Stone x 2 = 103.30' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

70 Chambers x 45.9 cf = 3,215.8 cf Chamber Storage

9,128.8 cf Field - 3,215.8 cf Chambers = 5,913.0 cf Stone x 40.0% Voids = 2,365.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,581.0 cf = 0.128 af

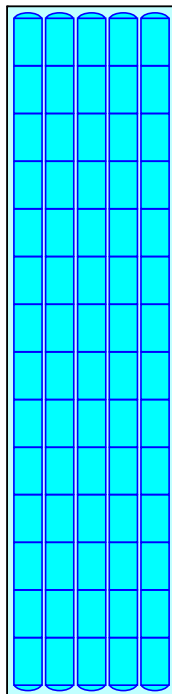
Overall Storage Efficiency = 61.1%

Overall System Size = 103.30' x 25.25' x 3.50'

70 Chambers

338.1 cy Field

219.0 cy Stone

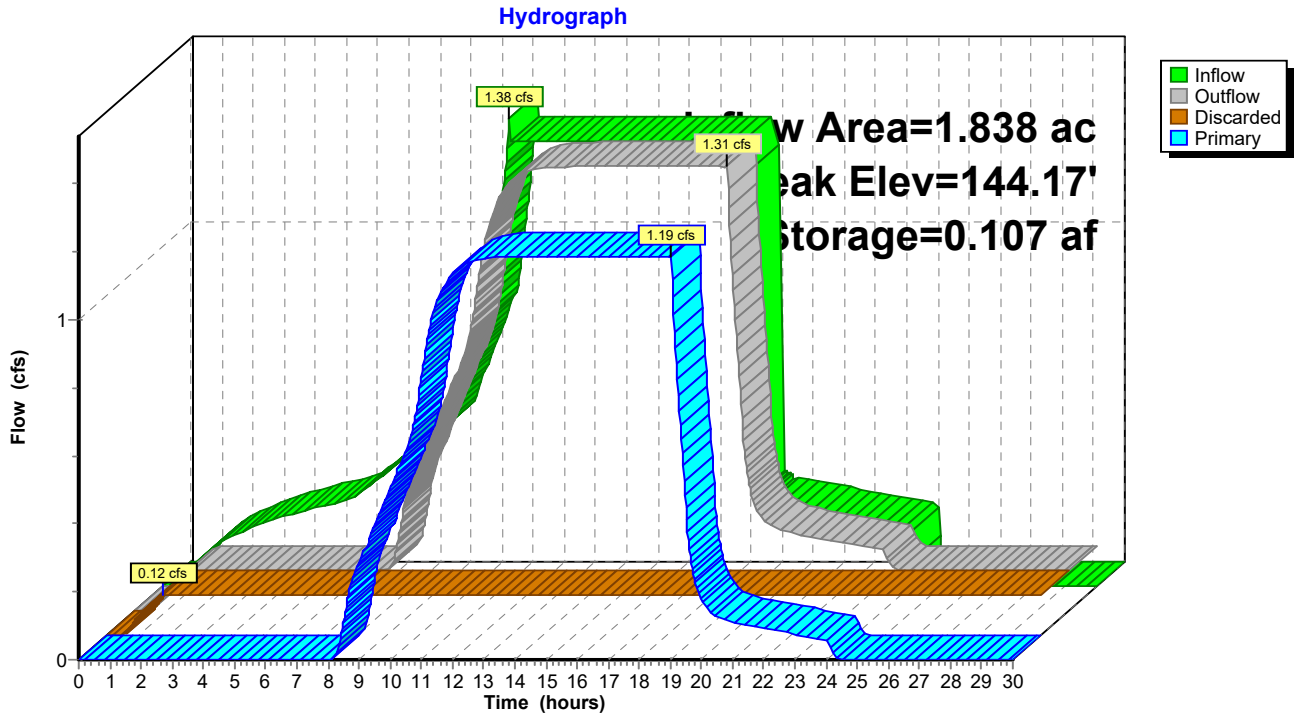


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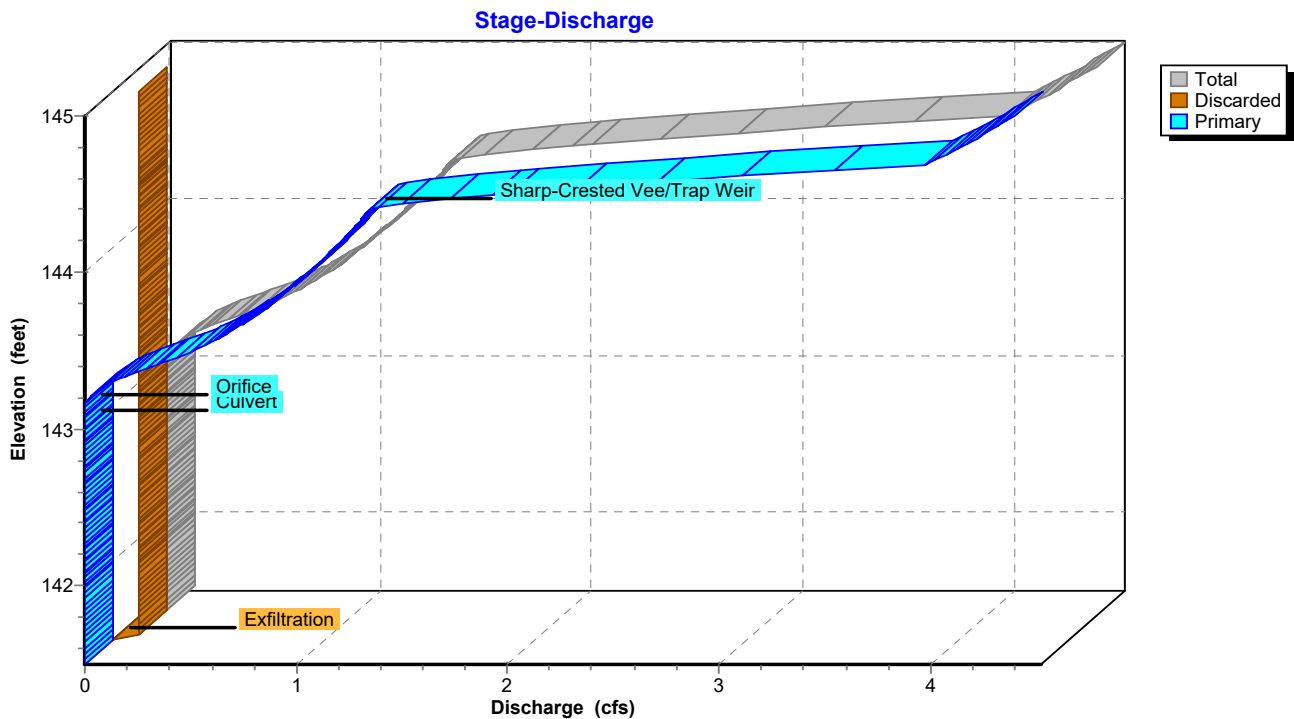
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Pond S-2: Subsurface Infiltration System



Pond S-2: Subsurface Infiltration System

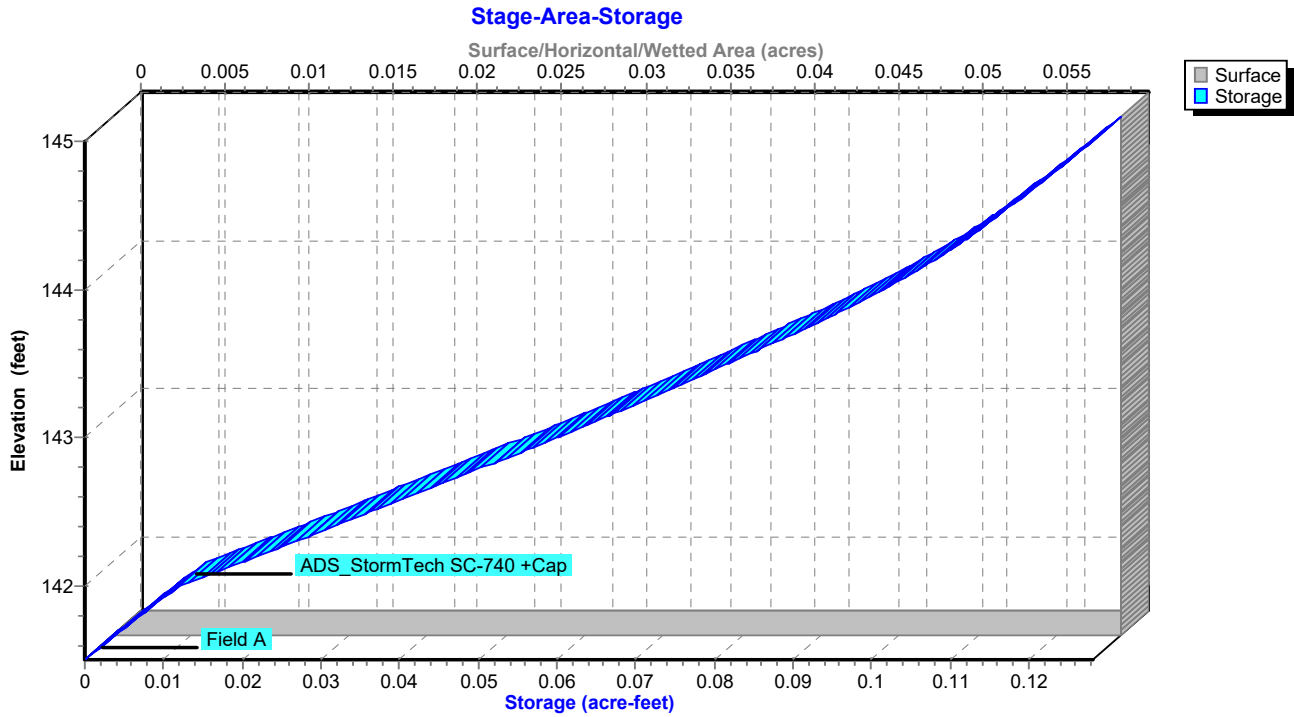


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Pond S-2: Subsurface Infiltration System



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NRCC 24-hr C 100-yr Rainfall=8.35"
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Summary for Pond S-3: Subsurface Infiltration System

Inflow Area = 1.375 ac, 64.06% Impervious, Inflow Depth = 6.87" for 100-yr event
Inflow = 6.02 cfs @ 12.15 hrs, Volume= 0.788 af
Outflow = 4.90 cfs @ 12.48 hrs, Volume= 0.788 af, Atten= 19%, Lag= 19.4 min
Discarded = 0.16 cfs @ 7.20 hrs, Volume= 0.301 af
Primary = 4.74 cfs @ 12.48 hrs, Volume= 0.487 af
Routed to Pond AP-1 : Norwalk River

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 139.72' @ 12.48 hrs Surf.Area= 0.081 ac Storage= 0.147 af

Plug-Flow detention time= 65.3 min calculated for 0.787 af (100% of inflow)
Center-of-Mass det. time= 65.4 min (833.3 - 767.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	137.00'	0.073 af	25.25'W x 138.90'L x 3.50'H Field A 0.282 af Overall - 0.100 af Embedded = 0.182 af x 40.0% Voids
#2A	137.50'	0.100 af	ADS_StormTech SC-740 +Cap x 95 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 95 Chambers in 5 Rows
		0.173 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	137.90'	18.0" Round Culvert L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 137.90' / 137.53' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	137.92'	7.0" Vert. Orifice X 3.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	139.90'	5.0' long Weir Wall Cv= 2.62 (C= 3.28)
#4	Discarded	137.00'	2.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 7.20 hrs HW=137.04' (Free Discharge)
↑**4=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=4.73 cfs @ 12.48 hrs HW=139.71' (Free Discharge)
↑**1=Culvert** (Passes 4.73 cfs of 7.87 cfs potential flow)
↑**2=Orifice** (Orifice Controls 4.73 cfs @ 5.90 fps)
↑**3=Weir Wall** (Controls 0.00 cfs)

AMSW_Proposed-R5

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Pond S-3: Subsurface Infiltration System - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

19 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 136.90' Row Length +12.0" End Stone x 2 = 138.90' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

95 Chambers x 45.9 cf = 4,364.3 cf Chamber Storage

12,275.0 cf Field - 4,364.3 cf Chambers = 7,910.7 cf Stone x 40.0% Voids = 3,164.3 cf Stone Storage

Chamber Storage + Stone Storage = 7,528.6 cf = 0.173 af

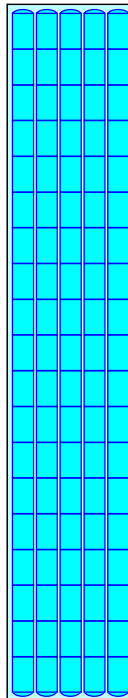
Overall Storage Efficiency = 61.3%

Overall System Size = 138.90' x 25.25' x 3.50'

95 Chambers

454.6 cy Field

293.0 cy Stone

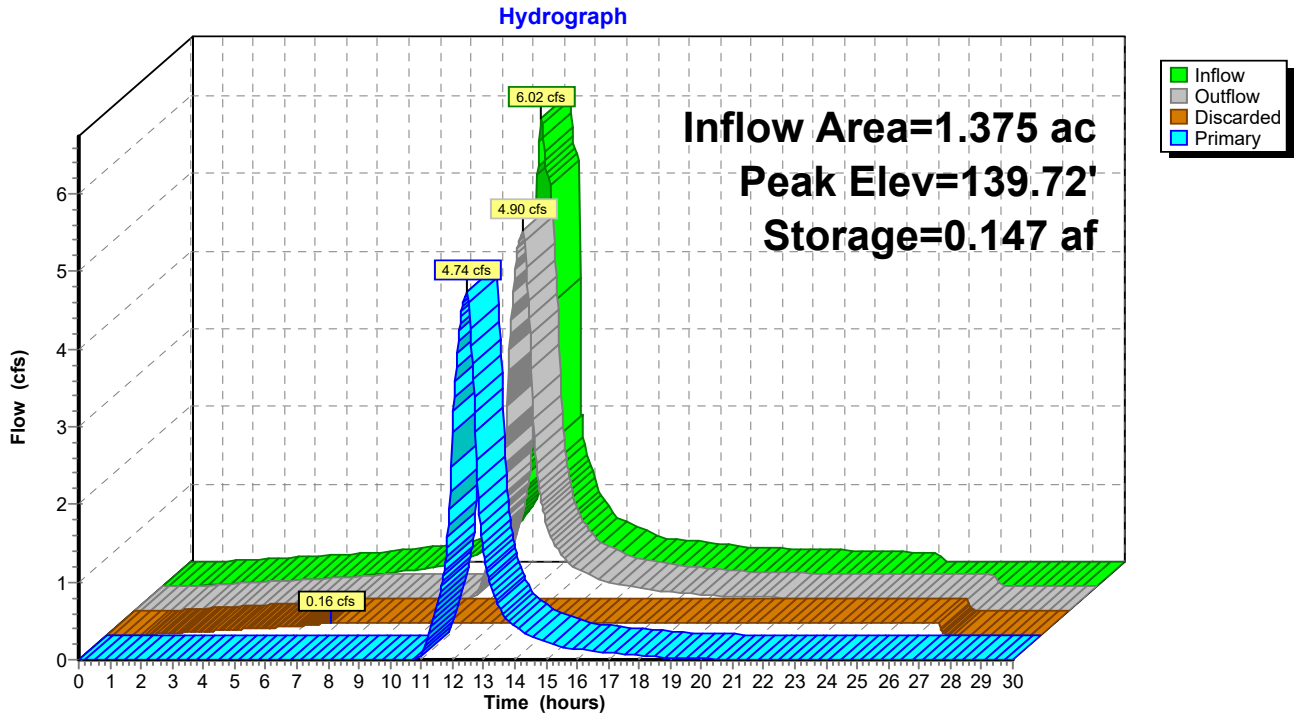


AMSW_Proposed-R5

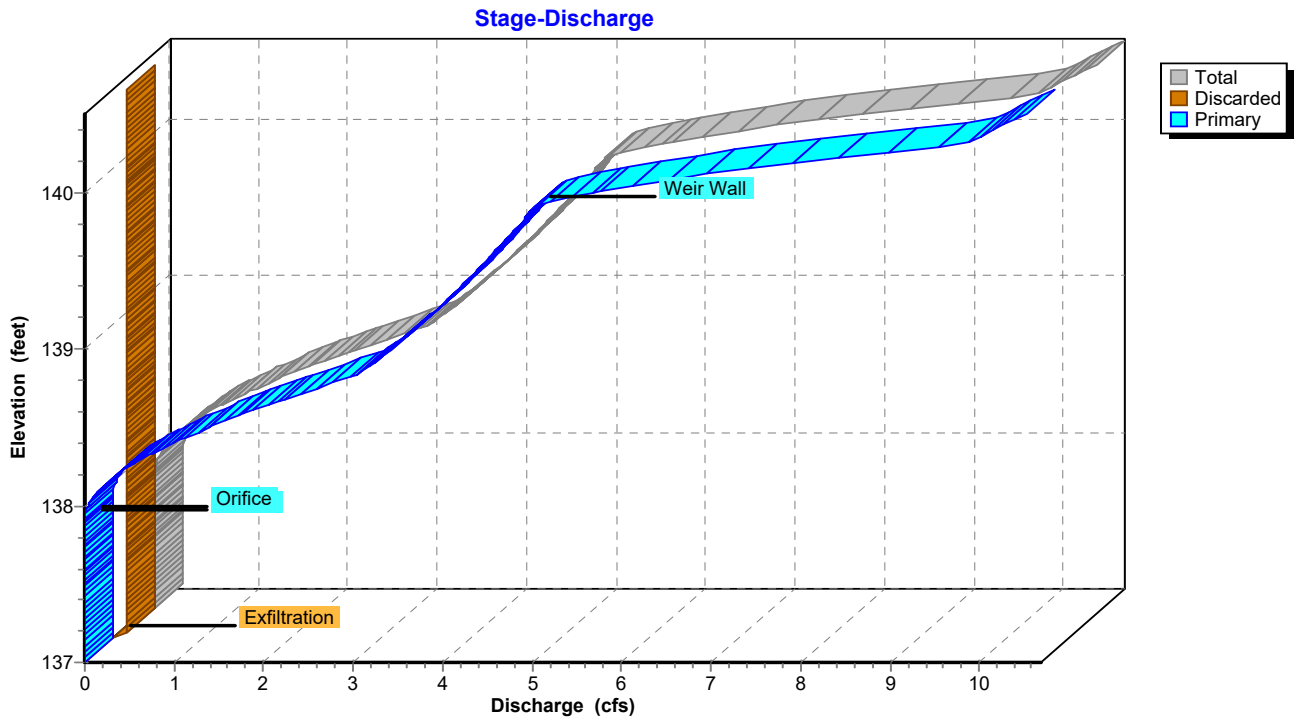
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Pond S-3: Subsurface Infiltration System



Pond S-3: Subsurface Infiltration System

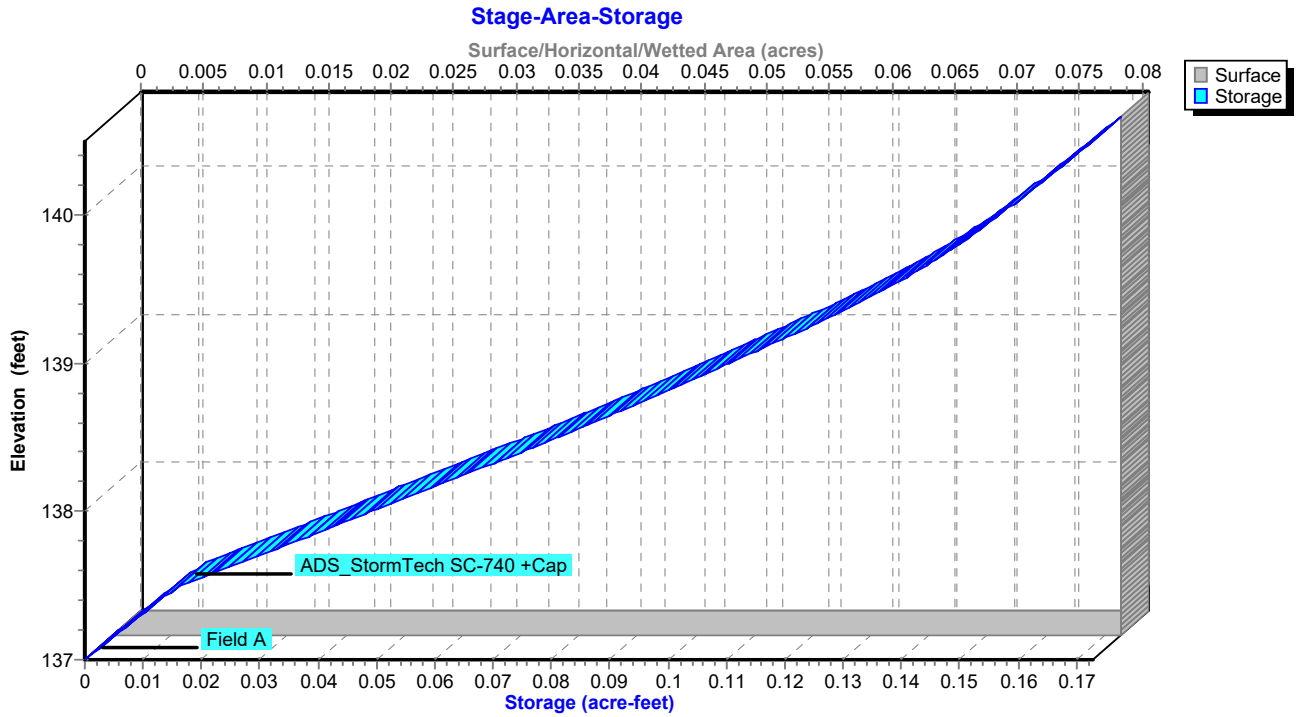


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Pond S-3: Subsurface Infiltration System





Appendix H Watershed Maps

Proposed Multifamily Development

131 Danbury Road, Wilton, Connecticut
Drainage Report

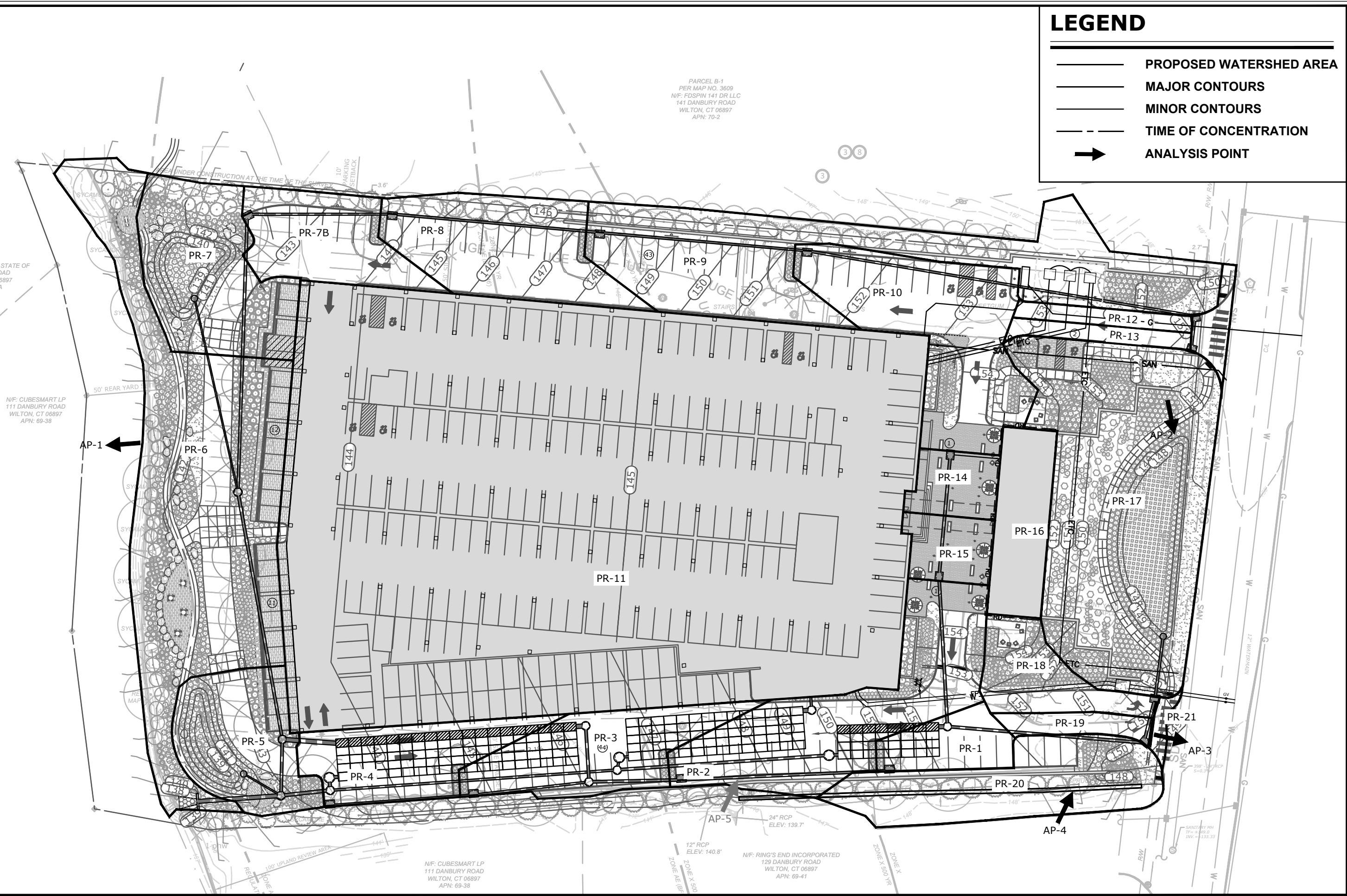
Ryan Sutherland, AMS Acquisitions Management Corporation

SLR Project No.: 141.21543.0000171

October 23, 2023



Drawing: CHALPHA WARS - JOBS, CAD DESIGN, 21543.00001 - PR CON PLAN SET - HYDROLOGY - MAIN - HYDRO - PROP - 03.DWG - Layout - TopPR-WS
 Plotted by: HINJOTI On this date: Tue, 2023 November 21 - 4:44pm



LEGEND

- PROPOSED WATERSHED AREA
- MAJOR CONTOURS
- MINOR CONTOURS
- TIME OF CONCENTRATION
- ➔ ANALYSIS POINT

PARCEL B-1
 PER MAP NO. 3609
 N/F: FDS PIN 141 DR LLC
 141 DANBURY ROAD
 WILTON, CT 06897
 APN: 70-2

STATE OF
 CT
 06897

N/F: CUBESMART LP
 111 DANBURY ROAD
 WILTON, CT 06897
 APN: 69-38

N/F: CUBESMART LP
 111 DANBURY ROAD
 WILTON, CT 06897
 APN: 69-38

N/F: RING'S END INCORPORATED
 129 DANBURY ROAD
 WILTON, CT 06897
 APN: 69-41



99 REALTY DRIVE
 WILTON, CT 06810
 203.271.5775
 SLRCONSULTING.COM

REVISIONS

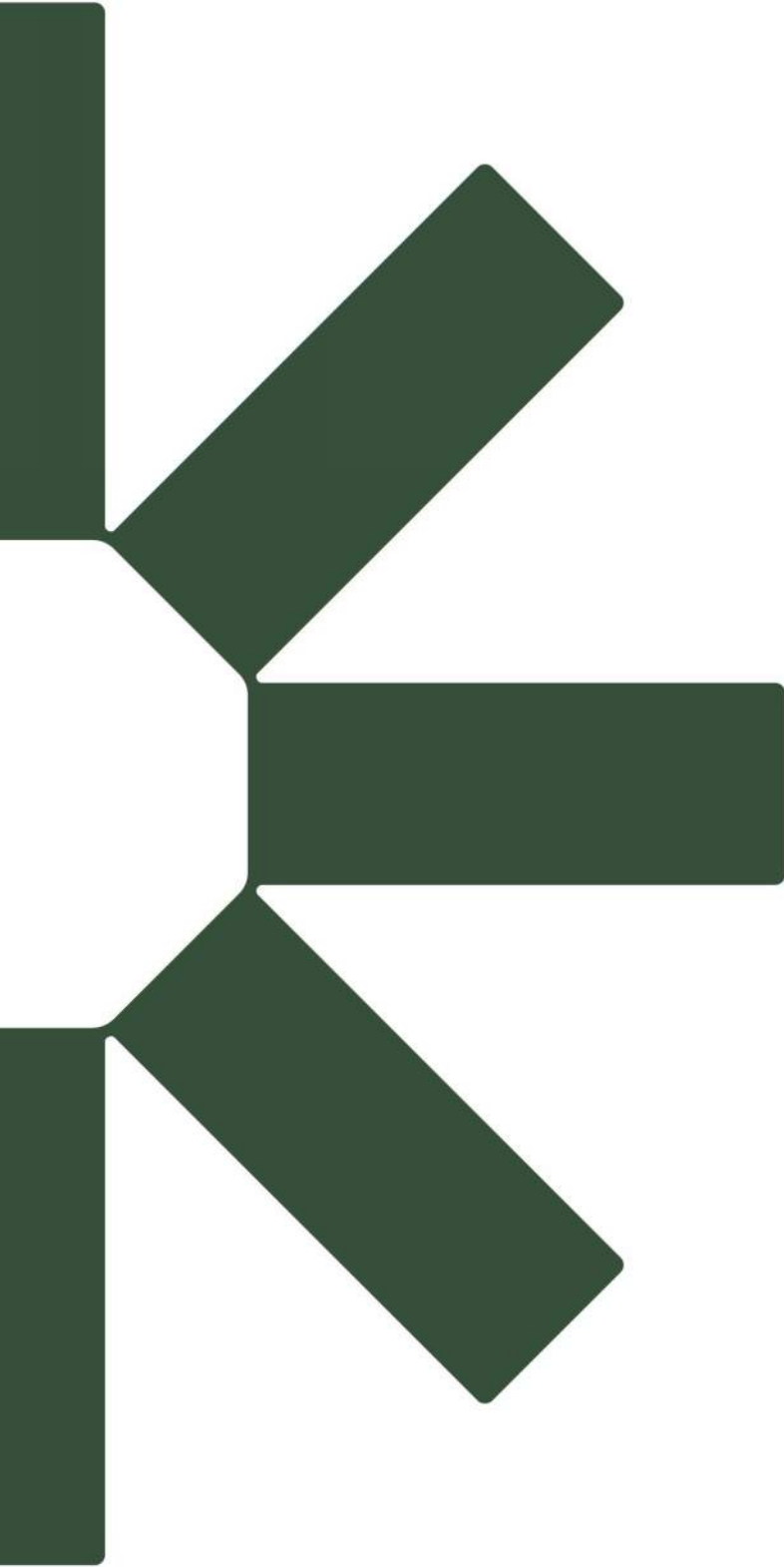
WATERSHED MAP - PROPOSED CONDITIONS
 PROPOSED MULTI-FAMILY DEVELOPMENT

131 DANBURY ROAD
 WILTON, CONNECTICUT

HM	HM	MG
DESIGNED	DRAWN	CHECKED
SCALE 1"=50'		
DATE NOVEMBER 21, 2023		
PROJECT NO. 21543.00001		

PR-WS

SHEET NO.



Making Sustainability Happen